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FUNDAMENTALS OF PHILOSOPHY

BY

WALTER S. GAMERTSFELDER, Ph. D.
PROFESSOR OF PHILOSOPHY
OHIO UNIVERSITY

AND

D. LUTHER EVANS, Ph. D.
COMPTON PROFESSOR OF PHILOSOPHY
COLLEGE OF WOOSTER

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To

JOSEPH ALEXANDER LEIGHTON

TEACHER, PHILOSOPHER, AND FRIEND

PREFACE

The present work attempts to provide textbook material for a thoroughgoing introductory course in philosophy. The authors have sought to meet the intellectual abilities of a beginner in philosophy without disparagement to the recognized dignity and difficulty of philosophical knowledge. Nearly all of the chapters are revised statements of material which, in mimeographed form, received extended testing in actual classroom use. To facilitate the studying of the book, special effort has been made to acquaint the student definitely with the outline followed by the authors in the organization of their discussions.

The general standpoint of the book is that philosophy is the preëminent instrument for the evaluation, unification, and justification of the higher cultural interests of man. Specialization of thought and action is, of course, recognized as a necessary condition for the progress of the human race, but the narrowness of intellectual outlook which frequently characterizes the contemporary specialized mind seriously needs the correction and supplementation of the criticizing and harmonizing ministries of philosophy. Science, morality, art, and religion must be investigated individually and analytically if their origin, nature, and value are to be understood; but, after all, they must be treated as interpenetrating and interdependent if the unity and extent of human experience is to receive adequate appreciation. This norm of the oneness of knowledge legitimately requires, we believe, that philosophy should be faithful both to the established findings of science and to the persistent claims of the spirit. To the authors, the notion which seems most satisfactorily to meet the ideal of a sympathetic interpretation of man and the world is the concept of personality. It will be observed that, in the discussions of personality, the idea of community receives a prominent place.

The general plan of the work may be regarded as combining the problem approach with the historical point of view. The method adopted seeks to furnish the reader with information and a technique for meeting the fundamental issues which constantly confront the reflective individual of the present day. In providing this aid we have taken care to acquaint the reader with the works of the great thinkers who, in the history of culture, have been the outstanding interpreters of human experience. The origin and development of the important philosophical doctrines are, therefore, treated in considerable detail. In no part of the work has it been our aim to present the student with an array of conclusions to be accepted without question; but throughout the book we have desired to stimulate an appreciation of the wholesome critical attitude of the truly philosophical approach. Where one or another of contending views seems to be especially favored, it is only to indicate that the authors have not wished to treat their subject matter in a wholly impersonal way. This purpose of treating extensively all sides of controversial problems has resulted in a text which demands but a modicum of collateral reading. The references at the end of each chapter will prove helpful, however, to those who wish additional knowledge on the subject.

The preparation of the manuscript was shared equally in every respect by the two authors. Certain chapters naturally were written by one of the authors, but frequent conferences and continuous correspondence have resulted, we believe, in a book possessing unity of plan and thought.

Our debt to the philosophers of the past and present is, of course, inestimable. Frequent use of the language of others is an obvious recognition of this indebtedness. We are indeed thankful to the many publishers who gave us permission to use quoted passages. To Professors H. T. Houf, J. R. Morton, Emmett Rowles, and L. M. Heil, and to Mr. E. C. Shimp we are very grateful for reading portions of the manuscript and for making valuable suggestions.

WALTER S. GAMERTSFELDER
D. LUTHER EVANS

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PART ONE

THE PLACE OF PHILOSOPHY IN THE COMMUNITY OF CULTURE

Chapter I

THE PERENNIAL PROBLEMS OF PHILOSOPHY

WHAT is philosophy? What is its subject matter, what is its aim or function, and what is its method? These questions naturally arise in the mind of one who is beginning the study of the subject. It is well that they should be asked again and again in the reading of these chapters.

Many students beginning the formal study of philosophy have an impression that philosophy is foreign to their experience. They think of philosophy as dealing with the mysterious, the abstruse, and the occult. Consequently the whole enterprise of philosophical study seems strange and forbidding. To dispel any such misgivings, let it be said now that while philosophy is one of the oldest intellectual pursuits of man, its problems are as vital and challenging to human intelligence to-day as at any time in the past. Some of the keenest and noblest minds in every age of civilization have been engaged in its study. Moreover, does not every normal human being sooner or later ask: Whence do I come, and whither do I go? What am I—matter, energy, mind, spirit? What is the meaning of my experience of right and wrong, good and bad? Am I free, or determined? What is truth, and error? In a word, what is a man worth, and what is the significance of his experience of truth, goodness, and beauty? Then, about the world, one asks such questions as: What is it made of? Is it one, or many? What are space, time, matter, life, mind? Does the world really change and grow, or was it finished at the beginning in a single creative act? Is the world purposive, like an organism, or is it a huge, though intricate, mechanism, like a machine? Can the educated man believe in God? These questions about man and the world are of perennial human concern, and they are the central problems of philosophy.

An introductory study of philosophy should not attempt to explain what philosophy is by formal definitions alone. Dry and abstract statements about philosophy are of small value without a knowledge of what it is to philosophize. Such definitions properly belong at the end of a treatise and not at the beginning. Nevertheless it may be of distinct advantage to the beginner to know something of how philosophers conceive their task, what methods they employ in solving their problems, and what conclusions they offer.

I. The Place and Purpose of Philosophy in the Past and Present

Philosophy in America and Europe, like law, government, morals, and the sciences, goes back to the ancient Greeks and Romans for its origin. For more than two thousand years philosophy has been a subject of vital concern to the peoples of the Western world. Naturally, what philosophy is in our time, in respect to aim, problems, methods, and solutions, is in no small degree determined by this history. We shall consider it worth while, therefore, first of all to examine briefly the conceptions of philosophy which were entertained by a few of the most brilliant and influential thinkers in the ancient world. Secondly, we shall present the views of philosophy as held by representative philosophers of the modern period. Thirdly, we shall consider the chief views which prevail to-day.

A. Philosophy for the Ancient Thinkers

The word *philosophy* is of Greek origin and literally means *love of wisdom* (φίλος, *loving,* and σοφία, *wisdom*). Herodotus (born 480 B.C.) uses the word in the story of

Solon's meeting with Crœsus. Crœsus welcomes the Athenian with the words, "Thou, philosophizing, hast visited a vast part of the world for the sake of reflection." The phrase "for the sake of reflection" is doubtless used to explain what is meant by the word "philosophizing." What makes Solon a philosophical traveler is the surprising circumstance that he does not, like the merchant or soldier, pursue a practical object in his journey. The word φιλοσοφία also appears in the writings of Thucydides and Isocrates to designate a general theoretical education as opposed to a practical one.

It was among the Greek colonists along the coast of Asia Minor that philosophy proper began in Western civilization. Here also science began. The theogonies and cosmogonies of Homer (9th to 11th centuries, B.C.), Hesiod, and the Orphic poets, together with the elementary ethical reflections of these and other poets, prepared the way for the more rigorous thinkers. The first philosophers were students of nature; they were informed in one or more of such subjects as mathematics, astronomy, physics, and geography. Favored by a combination of circumstances and conditions, such as eager minds, fertile imaginations, abundant energy, restless ambition, and varied topography and climate, these Greeks of the sixth century B.C. who migrated to the islands of the Ægean, began to wonder what the world was made of. They asked, what is the substance or basal stuff of things? In Miletus, the wealthiest of the Greek colonies, there were three of these nature philosophers (cosmologists)—Thales, Anaximander, and Anaximenes.

Thales advanced the idea that everything comes from water and returns to water. Anaximander, a pupil of Thales, held the view that the ultimate stuff of things is not water but a matter infinite in quantity and undetermined in quality. From this, through a motion inherent and eternal, there developed the earth and the heavenly bodies. Anaximander believed that the earth evolved from an original fluid state and that land animals in the beginning had a form of fishes and dwelt in the water. Anaximenes, a pupil of Anaximander, held that air is the first principle, fire, wind, clouds, water, and earth being produced by the condensation and rarefaction of air.

Other early Greek philosophers who tried to solve the riddle of the ultimate substance are: Pythagoras, who said reality is constituted on the basis of number; Heraclitus, who said that the stuff of things is fire and that everything is in ceaseless change (πάντα ῥεῖ, *all things flow*) except the order or law (λόγος) of change; Empedocles, who said the world is made of earth, air, fire, and water; Democritus, who said it is made of an infinite number of invisible and eternal tiny particles of matter—that is, atoms—and the void; and the Eleatics (Xenophanes, Parmenides, and Zeno), who held that reality is one and permanent.

Greek philosophy[1] passed through three stages or periods in its development:

1. Cosmological Period	625–480 B.C.
2. Anthropological Period	480–399 B.C.
3. Systematic Period	399–322 B.C.

The first period, which was described above, marks the birth of philosophical reflection among the Greeks. Its problem was: What is the *substance* of the world; what is original and permanent amid the changes of the physical world? In the Anthropological Period, an era ushered in by the Greek victories in the Persian wars, thought turned away from an interest in physical nature to a study of man and the social world. The Systematic Period, which begins with the death of Socrates and ends with the death of Aristotle, was interested in setting up a complete view of man in relation to the cosmos.

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[1] The history of philosophy in the Western world may be divided conveniently into the following periods:

Ancient Greek and Roman Philosophy	600 B.C. to 500 A.D.
Medieval Philosophy	500 to 1500
Modern Philosophy	1500 to 1900
Contemporary Philosophy	1900 to present time

This brief survey of the beginning of philosophy in the Western world suggests that philosophy began in wonder and developed into sustained reflection and inquiry. It further suggests that the physical and social conditions under which men live profoundly influence the form and content of their intellectual life. Let us notice certain conceptions of philosophy presented in Greek thought, which have attained great historic importance.

1. Plato (427–347 B.C.) and Aristotle (384–322 B.C.).— Since few, if any, men have influenced the thought of our civilization more than Plato and his pupil, Aristotle, it is well that we should know how they regard philosophy and the philosopher. Plato's "Dialogues" constitute the earliest writings on philosophy extant, and they throw light upon the beginning of philosophy. In the "Protagoras" Plato mentions six educated men—Thales among them—who were "lovers and emulators and disciples of the culture of the Lacedæmonians. . . ."[2] He also states that there were, in his time, more philosophers in Crete and Lacedæmonia than anywhere else in the world. He represents these Lacedæmonians as denying that they are wise men. Like Socrates, who was Plato's teacher, they pretended to be ignorant, acknowledging only that they loved wisdom, while through subtle reasoning in conversation they exposed the ignorance of their fellow men. Throughout his "Dialogues" Plato takes pains to distinguish the philosopher, the lover of wisdom, from the Sophist, who pretended to be wise and wished to be called a wise man. The Sophists, among whom were Protagoras and Gorgias, allowed themselves to be called wise men, while Socrates and his disciples preferred to be called philosophers; that is, lovers of wisdom.

Plato, therefore, speaks of philosophy as the love of knowledge or the love of wisdom, in opposition to the love of opinion merely. He defines the philosopher as one who grasps the essence or reality of things in contrast to the man who dwells in appearances and the show of sense. In the ''Republic'' he writes: ''Those who see the absolute and eternal and immutable may be said to know, and not to have opinion merely.''[3] Thus the philosophers are ''those who set their affections on that which in each case really exists.''[4] The genuine lover of knowledge, he holds, will ''strive intensely after truth,'' he will be free from littlemindedness, cowardice, covetousness, meanness, pretentiousness, and will possess such qualities as quickness of understanding, retentive memory, temperance, fortitude, and justice.[5]

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[2] Jowett translation, Vol. I, pp. 142–143. (Charles Scribner's Sons, 1902.)

Aristotle's conception of philosophy resembles Plato's. However, whereas Plato fuses all the branches of knowledge into one grand synthesis, Aristotle treats them separately and thus founds several of the special sciences. Nevertheless, in principle, philosophy for Aristotle is the love of knowledge (wisdom) for its own sake. Men begin to philosophize, he says, because of wonder. Philosophy, then, is wonder turned to earnest reflection. Writing of the earliest philosophers, he says: ''They wondered originally at the obvious difficulties, then advanced little by little and stated difficulties about the general matters. . . .'' What Aristotle called ''first philosophy'' is identical with what we now name *metaphysics,* and it is defined by Aristotle as ''concerned with first causes and first principles.'' Ordinary practical knowledge and even science, which deals with particulars, are closest to the senses, hence more easily known. Moreover, such knowledge is pursued for utilitarian ends. But first causes and principles, the universals, are ''the hardest for men to know'' because they are farthest from the senses, and they are sought by men who seek knowledge for its own sake.[6]

2. **Stoic and Epicurean.**—Two other types of philosophy

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[3] Jowett translation, p. 480.

[4] *Ibid.,* p. 484.

[5] *Ibid.,* pp. 485–487.

[6] Aristotle, ''Metaphysics,'' 980a21–983a32. See ''Aristotle, Selections'' (ed. by W. D. Ross), pp. 38–45. (Charles Scribner's Sons, 1924.)

in the early Greek and Roman period were Stoicism and Epicureanism. Because of the disturbed and uncertain conditions of social institutions in the ancient world between the fifth century B.C., and the fifth century A.D., both the Stoics and the Epicureans were interested in the aim and worth of human life. In the midst of the breakdown of economic and political institutions and in the presence of a disintegration of popular religion and morality, they asked the question: What shall we live for? How shall a man shape his life? What is left that is worth striving for? This inquiry into the nature of the highest good is what is meant by ethics. Stoics and Epicureans were interested in the natural sciences, in psychology and logic, only to the extent that they might better understand themselves and their relationship to the cosmos. Through these studies they hoped to find light upon the meaning and value of life. "The Stoic said that wisdom was a knowledge of things human and divine, and that philosophy was the practice of an art contrived to bring that knowledge about."[7] For the Stoic, then, philosophy is a striving after virtue conceived as an intelligent and willing subordination of one's life to the divine order of nature, and attained through a study of physics, logic, and ethics. The Epicurean, on the other hand, believed that pleasure or happiness guided by prudence is the end to be sought. Hence, for the Epicurean, philosophy is the rational pursuit of pleasure. Epicurus says:

> Let no one delay to study philosophy while he is young, and when he is old let him not become weary of the study; for no man can ever find the time unsuited or too late to study the health of the soul. And he who asserts either that it is not yet time to philosophize or that the hour has passed, is like a man who should say that the time is not yet come to be happy, or that it is too late. So that both young and old should study philosophy. . . .[8]

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[7] Charles M. Bakewell, "Source Book in Ancient Philosophy," p. 269. (Charles Scribner's Sons, 1907.)

[8] *Ibid.*, p. 296.

3. Mysticism or religious philosophy.—Still another form of philosophy appeared in the Western world between 300 B.C and 300 A.D. It arose out of the same unsettled social conditions which inspired Stoicism and Epicureanism. There was insecurity of property and government; scholars were not agreed on questions of morals, religion, and philosophy; skeptics had dared to propose that certain knowledge on any problem of life is impossible, that truth is wholly relative, and that the judgment of one person is about as good as the judgment of another. In consequence there was confusion of thought and uneasiness of mind. Many persons lost confidence in themselves and all living teachers, and, in the extremity of their distress, they sought guidance either in the *authority* of the great thinkers of the past, or in divine *revelation.* The existing state of civilization held out little hope of improvement in social institutions, or of giving any light upon the basic problems of human living. Consequently, to gain stability of life and in order to transmit something worth while to later generations, men turned either to the wisdom of the past, or to supernatural sources. While it is true that there existed throughout the Græco-Roman world a variety of religious mystery cults whose beliefs and practices influenced the philosophers of mysticism, mysticism as a philosophy is largely a product of the social and intellectual conditions of the age. There were three kinds of mysticism or religious philosophy in ancient philosophy, namely, Jewish-Greek theology, Neo-Pythagoreanism, and Neo-Platonism.

Since Neo-Platonism was the last and by far the most influential of all the Greek religious philosophies, the spirit and method of these mystical philosophies may be inferred from a brief exposition of Neo-Platonism. As the name itself implies, Neo-Platonism is a revival of certain parts of Plato's philosophy, to which are added elements from the Greek mystery religions and all preceding philosophies except Epicureanism. The movement was founded by Ammonius Saccas (175–242 A.D.), in Alexandria, Egypt;

but his pupil, Plotinus (204–269 A.D.), a native of Egypt, was its most brilliant leader and writer. From him the movement took its name. In 244 Plotinus established a school of philosophy in Rome, and within ten years he had gathered about him many influential citizens as disciples, among them the Emperor Gallienus and the empress.

Concerning the world, Plotinus taught that it is One and spiritual in nature. All reality and existence is *in* God and it *is* God, the Absolute Spirit. The world is an emanation from God; it is an overflow or effulgence of the infinite wealth of God's power and perfection. The plurality and diversity apparent in the world has its cause and foundation in the divine and eternal unity. Like an inexhaustible spring, God is the source of the endless stream of existence, and he is not diminished by ceaselessly creating and sustaining the world. So rich is the being of God that the finite mind can only say *that* God is, but not *what* he is. Thus, God is above our human ways of thinking; he is above truth, goodness, beauty, consciousness, intellect, and will, for all these depend upon him. In him all distinctions, limitations and imperfections are absent. He is Perfect Being, the indescribable and ineffable One.

Plotinus distinguishes three levels of being in the divine process of emanation, namely, pure thought or mind, soul, and matter. This trinity of levels in the world at large, the macrocosm, is reproduced in the three aspects of man's nature, namely, thought, soul, and body. Thus man is the microcosm. The world of being is therefore a trinity in unity, a whole of spirit, soul, and body. Knowledge, for Plotinus, exists on planes corresponding to the levels of being. In its lowest form, it is sense experience (body); in its next higher form, it is discursive reasoning (soul); but, in its highest form (spirit), it is immediate and direct insight, an intuition or vision of God. In this latter and highest reach of mind, the knower becomes one with the object known.

In a similar way Plotinus explains how the human soul achieves its moral and religious salvation. Beginning with a purification from sensuality and all sensuous desire, and continuing by means of reflection and theoretical contemplation, the human soul at last loses itself in the Absolute Spirit in an act of self-surrender, self-identification and ecstasy. Salvation is this mystical return to and union with God. In such an experience the individual soul rises above all sense of time and place; earthly attachments and interests are left behind for the joys of the beatific vision. Such, in brief, is the philosophy of Plotinus, the last great philosophic and religious effort of Greek genius. This philosophy found its way into Christian theology through St. Augustine and other theologians of the early Church. It stands to-day as the true prototype of all philosophical mysticism.[9] In the chapters which follow there will be occasion only incidentally to refer to mysticism. It may be well, therefore, to say a word further about its history, the extent of its following and its general characteristics.

Mysticism as a form of philosophy appears whenever and wherever the religious experience enters prominently as an animating and guiding motive into the development of a conception of the world and human life. Naturally the home of mysticism is in the East, whence have come all of the great religions of the world—Buddhism, Hinduism, Taoism, Christianity, and Mohammedanism. For nearly three thousand years mysticism has been the dominant philosophy of India. And mysticism has had a continuous history in the Western world since Plotinus. In the Middle Ages mysticism, like a shadow, followed the great theologians and philosophers of the Church, questioning their every effort to explain the dogmas of religion by discursive and logical methods. The basic truths and realities of religion, the mystic has always contended, do not admit of rational explanation; they are objects of faith and direct personal experience. The medieval mystics,[10] following the spirit and teachings of St. Paul, St. John of the Gospel, Origen, and St. Augustine, taught that the primary function of theology and philosophy is to show people *how* to experience God, and not to explain the dogmas. The challenge of the medieval mystics to the churchmen is in principle the position of mysticism in all times and places to those who put their confidence in reason or the senses. From Brahmanism and Buddhism in ancient India to Hinduism in contemporary India, from Taoism in ancient China to the present-day popular religions in the Far East, from Neo-Platonism in ancient Greek philosophy to current Quakerism in religion and Bergsonianism in philosophy, always and everywhere mysticism claims that neither mere sense experience nor discursive reasoning can give us the true meaning of God, reality, and life. The physical senses and reason deal with symbols only. The work of the senses and reason may, or may not be, an important preparatory step toward the final insight and understanding. This depends upon whether the type or degree of mysticism stresses activity or passivity as the appropriate attitude for the subject. But the inwardness of reality, it is held, is revealed only to those who through faith and trust assimilate themselves to and identify themselves with God or reality. Thus, for religious mysticism especially, it is the ''heart'' and not the ''head'' which is the organ of knowledge.

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[9] See Bakewell, "Source Book in Ancient Philosophy," pp. 340–393; James Hastings, "Encyclopædia of Religion and Ethics," article "Neoplatonism"; W. R. Inge, "The Philosophy of Plotinus (Longmans, Green and Co., 1918); T. Whittaker, "The Neoplatonists" (The Macmillan Co., 1928).

Since mysticism is anti-intellectual in nature, it almost defies definition. Yet, as indicated by Rudolph Otto, ''A characteristic common to all types of Mysticism is the Identification, in different degrees of completeness, of the personal self with the transcendent Reality.—'Identification' alone, however, is not enough for Mysticism; it must be Identification with the Something that is at once absolutely supreme in power and reality and wholly nonrational.''[11] The history of mysticism both in the East and the West shows that mysticism has existed in varying degrees and types. Sometimes it has been a religious mysticism of a quietistic, or emotional, or contemplative type; sometimes it has been a nature mysticism of a sensuous type, as in the poetry of Shelley, Wordsworth, Tennyson, Emerson, and Walt Whitman; sometimes it has been a speculative mysticism, as in the philosophy of Bruno, Spinoza, and Bradley. Whatever its form or degree, psychologically the mystical experience culminates in an event in which the subject and object are fused into one undivided whole or unity. The individual loses self-consciousness, he experiences an inrushing, it may be of power, or joy, or insight, or spiritual vision and moral strength, or freedom, while his whole being is caught up and absorbed in the reality of the object. For nature mysticism, the goal of the mystical experience is the fusion of the personality with nature; for religious and philosophical mysticism, the goal of the mystical experience is communion and union with God, or the Absolute. As William James remarks, the proper marks of the mystical experience are: first, it is ineffable; second, it possesses a noetic quality; third, it is transient and cannot be sustained for a long period; fourth, although the experience can be prepared for by a purgation of desire, by meditation and thought, yet when the mystical state has set in, the recipient is passive and feels that his own will is in abeyance.[12]

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[10] For example, Bernard de Clairvaux, Hugo of St. Victor, Bonaventura, Meister Eckhart, Johannes Tauler, Johannes Ruysbroek, Jacob Böhme.

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[11] ''The Idea of the Holy,'' translated by John W. Harvey, p. 22. (Oxford University Press, 1925.)

[12] See Wm. James, ''Varieties of Religious Experience,'' Lectures xvi, xvii; Mrs. Lily Adams Beck, ''The Story of Oriental Philosophy''; William Loftus Hare, ''Mysticism of East and West''; James Bissett Pratt, ''The Religions of India'' and ''The Pilgrimage of Buddha''; Rufus Jones, ''New Studies in Mystical Religion''; Rudolf Otto, ''The Idea of the Holy,'' translated by John W. Harvey; W. R. Inge, ''Christian Mysticism''; Charles A. Bennett, ''A Philosophical Study of Mysticism''; Josiah Royce, ''The Religious Aspect of Philosophy''; James Hastings, ''Encyclopædia of Religion and Ethics,'' article, ''Mysticism.''

B. Philosophy for Modern Thinkers

Philosophy in the modern period breathes again the free intellectual atmosphere of the ancient Greeks. Tradition, authority, and absolutism, which so much characterized the thought of the Middle Ages, is set aside for free inquiry, criticism, and an appeal to the facts of physical and human nature. Philosophy in this period is naturalistic in the sense that its final criteria are the senses and reason, and not the supernatural; it is scientific in the sense that it pays heed to the new developments in the mathematical, physical, biological, psychological, and social sciences. Those who find the source and test of knowledge in the senses are called empiricists, and those who see in reason the chief instrument of knowledge are called rationalists. Let us now consider the views of a few typical representatives of modern philosophy.

1. René Descartes (1596–1650) and Baruch Spinoza (1632–1677).—As a scientific student of anatomy and physiology, Descartes was the first to introduce the idea of mechanism in living bodies, thus becoming the founder of physiological psychology. He invented analytic geometry, and, being impressed with the exactness of mathematics as applied to physical problems, he conceived the thought of applying the same method to philosophy. Devoutly concerned, as he says, "to distinguish truth from error, that I might see the way clearly in my actions and walk with confidence in this life," he resolved to construct a philosophy of life which would possess all the certainty of geometry. Mathematics was preëminent among the sciences of this period because of its successful application in physics and mechanics. Mathematical reasoning was supposed to be above criticism because of its exactness and the certainty of its conclusions.

Believing that a man should do his own thinking and that merely to know the opinions of other men is neither science nor philosophy, Descartes sets out to erect a philosophy by doubting everything that he can doubt. He questions the trustworthiness of what earlier philosophers and theologians had written; he doubts what his parents and teachers have taught him; he doubts what his senses report to him and what he remembers; and finally, he doubts whether there is a God, whether he has a body, and whether there is an external world. At last he comes upon something that he cannot doubt, namely, that he doubts. To doubt, says Descartes, is to think; and to think implies the existence of a thinker. *Cogito ergo sum*—I think, therefore I am. Here, at last, is an axiom or self-evident truth, and upon it he builds his philosophy. From this premise, reasoning logically, so he thinks, he establishes the existence of God and the external world. Thus is the mathematical method and conception of knowledge applied to philosophy. Truth consists in self-evident propositions and the body of propositions clearly and logically deduced from them. As we shall have occasion to see later, Descartes sets up a dualistic world view with matter operating mechanically on the one side, and mind working under the guidance of will or purpose, on the other. The good life morally consists in a stoical intellectual and spiritual freedom achieved through a subordination of the passions to the rational will.[13]

Baruch Spinoza, the son of a Portuguese Jew, is of interest to us here for two reasons: first, because in him the mathematical method as applied to philosophy reached its most perfect form; and second, because of his marked influence upon philosophy since 1750. He was trained in the religion and theology of the Jewish faith, but was excommunicated at the age of twenty-four because of heresy. Though he never gave up faith in the unity of God, his excommunication from the synagogue gave him liberty to think freely in Holland, where he fled for refuge. Like Descartes, Spinoza was serious-minded, except that where

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[13] *Cf.* "Discourse on Method," in Benjamin Rand, "Modern Classical Philosophers," pp. 101–116; or, in "Descartes, Selections," ed. by R. M. Eaton, pp. 1–38 (Charles Scribner's Sons, 1927).

Descartes was earnestly concerned with rightly determining his actions in relation to his fellow men, Spinoza, persecuted and oppressed and alone in the world, sought religious consolation in contemplating things eternal. To set one's affections upon perishable things, Spinoza is convinced by bitter experience, is sure to bring the penalty of strife, envy, hatred, and fear. "But," as he says, "love towards a thing eternal and infinite feeds the mind with pure joy, and is wholly free from sorrow; this is to be greatly desired and strenuously sought for." Thus with Spinoza, as with Plato and Aristotle, philosophy is the search for the eternal and immutable.

Spinoza shared with his older contemporary the belief that the human mind can come to sure and universal knowledge, if it will proceed from self-evident principles and prove every step in the argument. He begins with definitions and axioms, as does any treatise on geometry, and advances to propositions which are demonstrated in true geometrical fashion by a reference back to the initial definitions and axioms. He closes the proof of each proposition with the familiar Q.E.D. Now Spinoza was interested in the world of nature for the knowledge it would give him about the meaning and value of life. Like Descartes, he was impressed with the success of mathematics and geometry in the physical sciences. Accepting the method of geometry and applying it with all the rigor which his sensitive religious temperament could command, Spinoza constructed a philosophy which had all the characteristics of a geometrical system. As every college student knows, the Euclidian geometry deals with abstract relations of space, entirely non-temporal in character. So it is with Spinoza's world view. Beginning with definitions and axioms, he deduces the consequences in terms of other propositions which follow from those premises, *not as temporal effects* such as we know in biological, psychological, and social processes, but as inevitable logical and eternal consequences. Time is treated merely as a mode of human thought or experience, and does not apply to the real world. From Spinoza's point of view, therefore, philosophy is an attempt to view the world as it eternally is; that is, *sub specie æternitatis*—under the form of eternity. Having identified the world of being with God, the eternal Substance, Spinoza finds his blessedness in the intellectual contemplation of God. This philosophy is a typical instance of monism in modern philosophy. The world is an eternal, changeless, timeless whole.[14]

2. **John Locke (1632–1704) and David Hume (1711–1776).**—If Descartes and Spinoza are typical examples of the mathematical and deductive method applied to philosophy, Locke and Hume are good examples of the psychological and inductive method applied to the same problems. The former two, emphasizing the value of reason, are called rationalists in philosophy; the latter two, stressing the testimony of the senses, are called empiricists. Locke and Hume agreed with Descartes and Spinoza that mere sense experience will not give certainty, yet, in opposition to them, they hold that sensation is the source of all that we know. Accordingly, the problem of Locke and Hume is the task of finding out the *origin, nature, extent,* and *validity* of knowledge. Starting with the belief that the mind at birth is a "blank tablet," they show how knowledge is built up from sense impressions. Simple ideas were regarded as coming directly from sense, and the complex ideas were regarded as due to the union or comparison of simple ideas. Since sensations are of limited number and range, our ideas and knowledge are limited. We do not even perceive all that we are capable of perceiving, nor do we understand all that we perceive. Certainty, therefore, is impossible.

Hume accepts the full consequences of sensationalism in knowledge and adopts skepticism as an intellectual attitude. As will be seen later, he denies the possibility of proving not only the existence of God and the Self, but also the reality of matter. Locke, however, more timid in his trust of the senses, grants with Descartes that we have self-evident knowledge of God and of the Self. He also holds that matter may safely be assumed to exist. On the other hand, both Locke and Hume accept certainty in mathematics because mathematical knowledge is the product of relating ideas; hence such knowledge has no dependence upon what exists or does not exist in the world of sense.[15]

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[14] *Cf.* Spinoza's "The Ethics" in Rand's "Modern Classical Philosophers," pp. 148–198.

3. **Immanuel Kant (1724–1804) and Georg Wilhelm Friedrich Hegel (1770–1831).**—Kant conceived the problem of philosophy as not greatly different from that which Locke and Hume set for themselves. He also believed that the chief business of philosophy is to criticize knowledge, to inquire into the origin, certainty, and limits of the human understanding, together with a delineation of the grounds of knowledge and the extent to which belief is warranted. His method, however, is logical and not psychological, as was that of Locke and Hume. He calls his work ''critical philosophy.'' Believing that the claims of both materialism and idealism had been one-sided and dogmatic, and refusing to accept as final the skeptical conclusions of Hume's sensationalism, Kant proposed to make a new inquiry into the conditions of the possibility of knowing, into the nature and capacity of the human understanding, and into the criterion of truth. Philosophy for Kant, then, is almost the same as what is now meant by theory of knowledge. In working out his criticism, Kant discovered that the content or material of knowledge comes through the senses (agreeing so far with Locke and Hume), but that the form or pattern of knowledge is the work of the mind. Certainty, therefore, is not possible through the senses, as Locke and Hume had insisted; but certainty is made possible through the work of reason or the mind in organizing

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[15] See ''Modern Classical Philosophers,'' on John Locke, pp. 215–262. On David Hume, pp. 307–346. Or, see ''Locke, Selections'' (edited by Sterling P. Lamprecht) (Charles Scribner's Sons, 1928); and ''Hume, Selections'' (edited by Charles W. Hendel, Jr.) (Charles Scribner's Sons, 1927).

the materials of sense data. Kant thus combines in his method and conclusions, as he thinks, the fair claims of the senses and of the reasoning activities.

For Hegel, as for Spinoza, the world is regarded as an orderly whole of parts rationally fitted together. The world of reality, whether in the physical, biological, social, moral, or religious realm, is the product of the evolution of the Absolute Ego (Reason or God) from Abstract Being into such concrete things as are and have been apparent in the universe. Since the world in its nature is a logical and rational structure—Reason made concrete through differentiation and development—the primary task of philosophy is to study and comprehend the harmony, order, and law revealed in nature. This is why Hegel says: ''Philosophy begins where the universal is comprehended as the all-embracing existence, or where the existent is laid hold of in a universal form, and where thinking about thought first emerges. Thought must be for itself, must come into existence in its freedom, liberate itself from nature and come out of its immersion in mere sense-perception; it must be free, enter within itself and there arrive at the consciousness of freedom.''[16] While Hegel insists that philosophy begins with Thought, the Absolute, it does so only in order to return to the concrete with understanding.[17] ''This thinking study of things,'' which is philosophy, Hegel maintains, will be satisfied with nothing short of seeing the logical necessity of its facts. Hegel's method is essentially deductive, like Spinoza's. Beginning with what seems to him as self-evident, namely, Abstract Mind or Spirit, and accepting the principle of non-contradiction as the law of mind, the criterion of truth as well as of reality, he conceives the universe as the unfolding of the Absolute Mind through time. His philosophy is a monistic, spiritual evolutionism.

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[16] ''History of Philosophy'' (translated by E. S. Haldane), Vol I, p. 94. (Kegan Paul, Trench, Trübner and Co., Ltd., 1892.)

[17] *Ibid.*, p. 25.

C. Philosophy for Contemporary Thinkers

Now, let us ask, what is philosophy for the philosophers of the present and recent past? The chapters which follow aim to answer this question in some detail. The chief philosophical questions are raised and treated in a manner which is intended to suggest the methods and conclusions of contemporary thought. However, some assistance in understanding those chapters may be had by examining statements of description and definition of philosophy by philosophers of the present and recent past. For purposes of organization and clarity we shall arrange the statements into three groups according to the emphasis made.

1. **Philosophy is an attitude of mind.**—Philosophy is a spirit of inquiry or thoughtful research into the meaning of experience in order that adjustments in thought and action may be more satisfactory. In keeping with this point of view, William James describes philosophy as ''only an unusually obstinate effort to think clearly''; F. J. E. Woodbridge calls it an ''attempt to do total and reflective thinking''; John Dewey holds that the task of philosophy is ''to clarify men's ideas as to the social and moral strifes of their own day''; Warner Fite speaks of it as ''a criticism of life,—a criticism of art and poetry and religion, no less than of science''; Walter T. Marvin characterizes it as ''an enthusiasm, a love of truth,'' and the philosopher he describes as one ''whose life and thought are controlled by this mightiest of loves''; and Josiah Royce says: ''Philosophy is not a presumptuous effort to explain the mysteries of the world by means of any superhuman insight or extraordinary cunning, but has its origin and value in an attempt to give a reasonable account of our personal attitude toward the serious business of life. You philosophize when you reflect critically upon what you are actually doing in the world. What you are doing is, of course, in the first place, living; and life involves passions, faiths, doubts, and courage. The critical inquiry into what

all these things mean and imply is philosophy. We have our faith in life; we want reflectively to estimate this faith.''[18]

These statements about philosophy from the representatives of various schools—pragmatists, realists, and idealists—agree in suggesting that the *real facts* with which human beings must reckon are not the obvious data of experience. They teach that the deeper meanings and values of life cannot be obtained by a glance upon the ''world'' within or the world without. In the sciences and other specialized studies, it is only after the outer and more obvious facts are taken account of and the deeper and more subtle data are considered that the fuller understanding of principles and laws can be gained. So in philosophy it is only by an obstinate effort of will and purpose that we can critically appraise our beliefs and estimate the grounds on which they rest. The veil of ignorance, of prejudice, of habitual modes of thought, of passion and desire, shut off the vision of truth and keep us from appreciating the realities of life. Sometimes it is increasing years that give a vantage point for grasping the meaning of life; sometimes it is the reversal of fortune, the painful sting of adversity, or the mellowing influence of sorrow that pulls aside the veil. More often, perhaps, this deeper, critical insight into life's meanings and values comes to those who pay the price of possession through careful observation, thoughtful reading, and honest reflection. In a broad sense philosophy is open to all who will criticize life—all of life, its purposes, beliefs, and practices. In the narrower sense, the sense in which philosophy is regarded as a science, this critical temper is applied more methodically and more exhaustively.

2. Philosophy is a criticism of concepts.—Philosophy is a critical analysis and comparison of the working concepts (categories) of the sciences and common life. J. Arthur

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[18] ''The Spirit of Modern Philosophy,'' pp. 1–2; *cf.* also pp. 14–15. (By permission of and arrangement with Houghton Mifflin Co.)

Thomson speaks of philosophy (metaphysics) as a ''sublime Logic, testing the completeness and consistency of our scientific descriptions''—in a word, its work is the ''criticism of categories.''[19] C. D. Broad lays stress upon the same idea, only he widens it, when he says it is the work of critical philosophy ''to take the concepts that we daily use in common life and science, to analyze them, and thus to determine their precise meanings and their mutual relations.''[20] Bertrand Russell has rather consistently emphasized this conception of philosophy. He says: ''Philosophy involves a criticism of scientific knowledge.''[21] ''The special sciences have grown up,'' he states, ''by the use of notions derived from common sense. . . . Science itself has shown that none of these common-sense notions will quite serve for the explanations of the world; but it is hardly the province of each special science to undertake the necessary reconstruction of fundamentals. This must be the business of philosophy.''[22] In addition to this work of criticizing the fundamentals of science, Russell believes that philosophy must do something toward reshaping ''knowledge in ordinary life.'' This knowledge, he holds, suffers from three defects, namely, cocksureness, vagueness, and self-contradictoriness. Philosophy must first become aware of these defects; that is, locate them and then seek to correct them ''without throwing over knowledge altogether.'' Such an intellectual activity, whether applied to science or to common beliefs, obviously must be a continuing activity, not one in which we can hope to realize a final perfection.[23]

The relation of philosophy to the special sciences is to be treated in Chapter III. Nevertheless a word further may be added here to explain what is meant by the concepts and categories of science and common life. Every science makes assumptions and employs explanatory concepts which it is beyond the interest of the science to justify. Common thought and experience also operate by means of a fund of such assumptions.[24] Such assumptions and concepts are warranted in view of science, provided they are useful as principles of explanation and as instruments of control or prediction. In common life assumptions are justified by their practical utility. Among the concepts and general ideas which need inspection are: space, time, quantity, quality, matter, mind, energy, causation, order, natural law, evolution, individuality, fact, knowledge, truth, purpose, good, evil, pleasure, happiness, and God. Nearly all of these concepts are employed in common life as well as in physical or social science. Sometimes it occurs that a concept will be used in one science and not in another; or, a concept may be used with one meaning in one science and with a different meaning in another science. For example, classical physics used *cause* in a mechanical sense, while the social sciences used it in a purposive sense. Common-sense thought has always accepted the reality of mind and the causal efficacy of will and purpose. Physical science can dispense with the notion of mind and purposive causation. Some psychologists hold that psychology as a science can dispense with mind, consciousness, and purpose. These few statements will serve to illustrate what kinds of questions may be raised about the working concepts in general use. Chapter III treats them more fully.

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[19] ''Introduction to Science,'' p. 129. (Henry Holt and Co., 1911.)

[20] ''Scientific Thought,'' p. 16. (Harcourt, Brace and Co., 1923.)

[21] ''Philosophy,'' p. 2. (W. W. Norton and Co., Inc., 1927.)

[22] *Ibid.*

[23] *Ibid.*, Ch. I.

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[24] Does philosophy make assumptions? It must be granted that philosophy also makes assumptions. Just what assumptions need to be made will depend upon how the philosopher conceives his task and upon what his philosophical views are. Schools and types of philosophy differ more in the nature and number of their assumptions than in their methods of reasoning. Any philosophy which grants the possibility of knowledge—there can be genuine philosophy only where there is knowledge of some kind—must make the minimal assumption that human experience when criticized is trustworthy. The fuller implication of this statement will appear in later chapters. It should be noted, however, that even this assumption must be made by any science, in addition to its other working assumptions. Philosophy differs from the special sciences in that it assumes responsibility, through logic and theory of knowledge, to examine and criticize its own assumptions together with those of science and common life.

3. Philosophy is unified knowledge.—Philosophy is the endeavor to join together into a systematic whole of knowledge the assumptions and conclusions of the special sciences; and, supplementing this harmonized body of knowledge with the concrete intuitions of the poet, moralist, and religionist, it attempts to offer a world view and a life view. Herbert Spencer says that "science is partially unified knowledge; philosophy is completely unified knowledge."[25] Wilhelm Wundt speaks of philosophy as "the universal science which has to unite the cognitions, obtained by the particular sciences, into a consistent system."[26] F. Paulsen calls philosophy "the sum total of all scientific knowledge,—a *universitas scientiarum*"—a "never-completed system which the ages are building."[27] G. T. Ladd defines it as "the progressive rational system of the principles presupposed and ascertained by the particular sciences, in their relation to ultimate reality."[28] J. A. Leighton describes philosophy as an attempt "to see all the main features of experience, life and conduct in their relationships."[29] A. N. Whitehead suggests that "the study of philosophy is a voyage toward the larger generalities," a voyage in which we "endeavor to frame a coherent, logical, necessary system of general ideas in terms of which every element of our experience can be interpreted."[30] W. M. Urban characterizes philosophy as an attempt "to unify and correlate the results of the different sciences, and to understand and properly evaluate the different activities of men as expressed in science, in art, in morals, and also in religion, taken in the broadest sense."[31]

The question has been raised by certain philosophers whether the moral, esthetic, and religious experiences of mankind have ever been sufficiently organized scientifically as to warrant their use seriously by philosophy. Critical observation and study in these fields, it is maintained, have been hindered in part by prejudice and the lack of technical facilities, but mostly by the inherent difficulty of the undertaking. The data in these departments of life have not been reduced to exact and verifiable form, and in consequence, it is held, they do not deserve to be treated alongside such trustworthy material as is provided by the physical sciences. Other philosophers of equal rank and standing maintain that the insights of the poet, the moralist, the esthetic genius and the religious prophet, as well as the history of the fields in which they are specialists, do constitute an original and trustworthy material (when critically examined) for constructing a view of life and the world. This latter group, then, would supplement the material provided by the older and generally accepted sciences with the reflectively tested data from the fine arts, morals, and religion.

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[25] "First Principles," Part II, par. 37. (D. Appleton and Co.)

[26] "System of Philosophy," p. 2.

[27] "Introduction to Philosophy," p. 19. (Henry Holt and Co., 1895.)

[28] *Ibid.*, p. 27.

[29] "The Field of Philosophy," p. 25. (D. Appleton and Co., 1923.)

[30] "Process and Reality," pp. 4, 14. (The Macmillan Co., 1929.)

[31] *Dartmouth Alumni Magazine*, August, 1929.

The question just raised is of such importance and such far-reaching implication that it deserves further discussion. Professor C. D. Broad, in "Scientific Thought," sets forth the view that there are and have been two types of philosophy, namely, *critical* and *speculative*. By critical philosophy he means a criticism of the concepts or categories of science and common life, as indicated under the heading of this section. The object of speculative philosophy, he says, "is to take over the results of the various sciences, to add to them the results of the religious and ethical experiences of mankind, and then to reflect upon the whole. The hope is that, by this means, we may be able to reach some general conclusions as to the nature of the world and as to our position and prospects in it."[32] The mass of material from the ethical and religious experience of the race, Professor Broad holds, has not yet been clarified and appraised scientifically, and on this account "it is then quite possible that the time for speculative philosophy has not yet come."[33] Until this part of man's experience is organized scientifically, speculative philosophy can be little more than a series of "happy guesses" worked out on a very slender basis. Such a view of the world and life is particularly likely to be biased by hopes and fears, by likes and dislikes, and by individual judgments of value. As a class, speculative philosophers, Professor Broad believes, have been rather dogmatic in their conclusions. On the other hand, he warns, if we try to steer clear of this dogmatism, by ignoring our tastes and preferences, thus remaining "ethically neutral," we are liable to go to the opposite extreme and accept a conception of the world and life which annuls all judgments of value.[34] This, in substance, is the view of those who teach that we are not yet ready for a synthetic or speculative philosophy.

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[32] *Op. cit.*, p. 20. (Harcourt, Brace and Co., 1923.)

Professor Broad's warning against the dangers of speculative philosophy is sound and timely. The *facts* about the world are not all in; the sciences are still young, and much that they tell us we do not yet understand. Critical philosophy has by no means finished its work. Judging from the history of even the more exact sciences, the evidence is not all in. There is no better illustration of this than the recent (since 1900) revolutionary conceptions in physics. As a result of these changes we are coming to new views of matter and the laws of nature. Similar changes are taking place in biology and psychology. But when will all of the facts be in? And, can synthetic or speculative philosophy wait? That philosophy is *not* to engage in speculative and constructive syntheses of all elements in experience implies a false conception of both experience (or science as organized experience) and philosophy; namely, that experience ever will be complete and that the aim of philosophy is finality instead of progress. In such matters as education, government, engineering, and practical moral relations in society, for example, we cannot hold up our decisions and general conclusions until the facts are all in. Some of the facts will not be discovered until conclusions tentatively held are accepted as true and acted upon. Losses may follow from wrong conclusions; but there is no other way. So it is in philosophy. It follows, of course, that conclusions in philosophy should be provisional and tentative, not final; in the words of Professor Whitehead, "Speculative boldness must be balanced by complete humility before logic, and before fact."[35] Moreover, it should be observed, there is nothing exceptional in the fact that the philosopher draws the outline of his world view and life view before he has at hand all the materials thoroughly tested to complete it. The artist in painting a picture first sketches the pattern in outline, then the details. Even the college student carries with him some conception of his completed college course while he does his freshman year. And certainly, to the extent that men are creators and molders of the social order, a conception of the whole cannot wait for an assembling of all the parts. Our position, therefore, is that philosophy must be synthetic and speculative in order to be intelligently analytical.

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[33] *Op cit.*, p. 20.

[34] *Cf. ibid.*, pp. 20–21.

In support of the view that the proper business of philosophy is the double task of (a) criticizing the concepts of science and common life, and (b) effecting so far as possible a complete synthesis of experience, we may quote two eminent living (1930) philosophers. Professor J. H. Muirhead points out that the philosopher need not be supposed to know more than other people, but that he be expected to hold what he knows in a different way; namely, that what he does believe is organized around some central principle. Speaking further of the characteristics of the philosopher, he says: "First and foremost he is the man who takes things as they are. He wants facts to begin with, all facts and nothing but the facts. . . . But this is only half the story. Besides the facts as they are, besides things as they exist, there are facts as they 'ought to be,' things as they may and under certain conditions must exist. This is a part of the fact taken in all its scope, and —surely the main part. The philosopher sees this: he sees the 'fact to be' within the 'fact that is,' and, being such as he is, he cannot see it there without seeking to release it from its imprisonment. He accepts the Universe but he accepts it to remake it.''[36] Professor A. N. Whitehead recognizes the critical rôle of philosophy, but he also accepts its speculative or synthetic function. We quote him at length: ''I hold that philosophy is the critic of abstractions. Its function is the double one, first of harmonizing them by assigning to them their right relative status as abstractions, and secondly of completing them by direct comparison with more concrete intuitions of the universe, and thereby promoting the formation of more complete schemes of thought. It is in respect to this comparison that the testimony of great poets is of such importance. Their survival is evidence that they express deep intuitions of mankind penetrating into what is universal and concrete fact. Philosophy is not one among the sciences with its own little scheme of abstractions which it works away at perfecting and improving. It is the survey of sciences, with the special object of their harmony and of their completion. It brings to this task not only the evidence of the special sciences, but also its own approach to concrete experience. It confronts the sciences with concrete fact. . . . The literature of the nineteenth century, especially its English poetic literature, is a witness to the discord between the æsthetic intuitions of mankind and the mechanism of science. . . . Both Shelley and Wordsworth emphatically bear witness that nature cannot be divorced from its æsthetic values; and that these values arise from the cumulation, in some sense, of the brooding presence of the whole onto its various parts.''[37] In the ''Preface'' to his Gifford Lectures (1927–1928), which he describes ''as an essay in speculative philosophy,'' he remarks: ''—it must be one of the motives of a complete cosmology, to construct a system of ideas which brings the æsthetic, moral, and religious interests in relation with those concepts of the world which have their origin in natural science.''[38]

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[35] "Process and Reality," p. 25.

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[36] *The Personalist*, July, 1927, pp. 159–160.

D. ESTIMATE OF HISTORICAL NOTIONS OF PHILOSOPHY

The foregoing definitions reveal the truth in Bertrand Russell's statement; namely, that the definition of philosophy ''will vary according to the philosophy we adopt.''[39] The meaning of philosophy depends somewhat upon the *problems* that are singled out as important and fundamental, upon the *method* employed, and upon the *conclusions* arrived at. Philosophies differ in all three of these respects. Yet, as is plainly shown by the history of philosophy, there are impressive resemblances among philosophies in respect to problems, methods, and conclusions; in fact, there is about as much resemblance among philosophies *as* philosophies as there is among the sciences as sciences. It may be said with truthfulness that the diversity in problems, methods, and conclusions in philosophy, such as there is, grows out of the manifold and diverse character of interests, problems, methods, and beliefs in the sciences and in common life. It is just these discrepancies, differences, and conflicts in scientific and everyday beliefs that philosophy as a discipline tries to alleviate and remove. That philosophies have been and still are classified into schools goes to show that some unity and agreement has been achieved. Moreover, that schools still exist suggests that no finality has been reached. Perhaps one of the great lessons to be learned from the history of philosophy—the same lesson may be learned from the history of science—is that philosophy is a continuing activity in which no final perfection of knowledge can be achieved. Complete knowledge, like perfect goodness, seems always to lie ahead of those who adventurously pursue it.

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[37] ''Science and the Modern World,'' pp. 126–127. Whitehead explains what he means by value in the statement: ''Value is the word I use for the intrinsic reality of an event. Value is an element which permeates through and through the poetic view of nature.'' *Ibid.*, p. 136. (By permission of The Macmillan Co., publishers.)

To one who takes the ''speculative'' view of philosophy and not the analytic, ''philosophy can never be mere knowledge; it must also be artistic and ethical life. Philosophical systems have been called conceptual poems. They are; but not in the captious sense that the conceptual construction is characterized by unreality, but in the higher sense that genuine poetry always is moulded and moulding life. The esthetic-ethical element in philosophy is at the same time the personal.''—W. WINDELBAND, ''An Introduction to Philosophy,'' p. 30. Professor Warner Fite also holds that philosophy which is not poetry is not philosophy.

[38] ''Process and Reality,'' p. 6. (By permission of The Macmillan Co., publishers.) *Cf.* also Part I and Part II of the same work for a defense of speculative philosophy.

[39] ''Philosophy,'' p. 1.

When we bring together from the above definitions and descriptions what to us seems essential, we conclude that philosophy is a conscious, reflective endeavor to coördinate the elements of the physical and social sciences *with* the intuitions of poets, artists, and religionists. This coordination and synthesis of experience on comprehensive lines is undertaken for the purpose of gaining an intelligent view of the world as a whole, for the aid it will give in making proper human adjustment, and for the light it will throw on the meaning and value of human life. Philosophy thus seeks to think out in terms of all the significant elements of experience a world view and a life view. No element of human experience, when properly inspected and criticized, may be neglected if our philosophy is to be free from the charge of bias or prejudice. In method such a philosophy will proceed by induction and deduction, sense observation and reflection, constructive imagination and inference,—all are to be brought into use for the stupendous task.

The problems of philosophy, as we shall see more specifically later, center about the nature of knowledge, matter, life, mind, and value. It is the purpose of the following chapters to show how these problems arise, to suggest where and how to look for solutions, and to indicate some of the significant conclusions which have been offered. Let us now pass to a further examination of the features of philosophical knowledge as they are disclosed to us in the different branches of this intellectual pursuit.

II. The Divisions of Philosophy

It is as difficult to give a satisfactory division of philosophy as it is to give a brief definition of philosophy, and for the same reasons. Philosophers still differ on the question as to how to parcel out the philosophical questions into branches or disciplines just as they do on the question of what philosophy primarily is. The student is familiar with the fact that many of the principal sciences, such as physics, chemistry, biology, geology, have divided and subdivided. In addition to this, a hybridizing process has been taking place and we now have such sciences as physical chemistry, mathematical physics, electro-chemistry, and chemical biology. A process similar to this has been going on within the field of philosophy so that under certain circumstances and for certain purposes it may be proper to treat almost any philosophical question alongside any other. However, since our purpose at this point in the discussion is to give the beginner an introduction to the studies usually regarded as divisions of philosophy, we may ignore the controversial side of the question and proceed at once to a brief descriptive account of each branch.

A. Logic

Logic covers a wide field and itself is divided into many kinds. In general, however, it is "the science of the nature and conditions of correct thinking."[40] It has been defined as the science of inference, necessary and probable. It is reflective thinking about thinking; it is a reasoned consideration of the mental aspect of the sciences. In the words of Professor Avey, "What conditions lead to the attainment of real and abiding knowledge, and what principles and rules can be formulated as guides to this end, are the central concern of logical science."[41] From these statements it should be clear that logic is concerned with both the *process* and the *product* of thinking; that is, the psychology of reflection as well as its truth value. Reflective thinking has been defined by Professor Dewey as "the active, persistent, and careful consideration of any belief or supposed form of knowledge in the light of the grounds that support it and the further conclusions to which it leads."[42] If thinking be regarded as a game, then logic lays down the rules for the game. It also points out how and where the errors in thinking are likely to occur. There are the following types of logic:[43]

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[40] R. W. Sellars, "The Essentials of Logic," p. 2. (Houghton Mifflin Co., 1925.)

1. **Aristotelian logic.**—This logic, sometimes called *formal logic,* had its origin in Aristotle's "*Organon,*" and is concerned primarily with the principles and rules of deductive thinking and the syllogism. It is a logic of proof and demonstration. It deals with various kinds of propositions, analyzing, comparing, and relating them with a view to discovering what inferences, direct (immediate) and indirect (mediate) may be made from them. The Aristotelian Logic has in modern times divided into two schools of thought: *a.* The neo-scholastic logic is the logic of those who take the logic of Aristotle, purify it of its medieval flavor, and apply it to modern problems. P. Coffey's "Science of Logic" and G. H. Joyce's "Principles of Logic" represent this standpoint. *b.* The modernized Aristotelian logic is the logic of Aristotle modified to suit modern needs of deductive thinking, together with a full discussion of the principles and methods of inductive think-

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[41] "The Function and Forms of Thought," p. 12. (Henry Holt and Co., 1927.)

[42] "How We Think," p. 6. (D. C. Heath and Co., 1910.)

[43] *Cf.* D. S. Robinson, "The Principles of Reasoning," Ch. XXV. (D. Appleton and Co., 1924.)

ing in the sciences. H. W. B. Joseph's "Introduction to Logic" represents this point of view.

2. **Symbolic logic.**—This logic, also called *algebra of logic, calculus of logic, mathematical logic,* and even other names, abandons entirely the use of written words and employs symbols only. Believing that exact thinking requires a precise and hence a mathematical language, logicians of this type substitute idea-symbols (ideograms) for sound-symbols (phonograms), and thinking becomes a process of relating terms in equations. C. I. Lewis defines symbolic logic as "the development of the most general principles of rational procedure, in ideographic symbols, and in a form which exhibits the connection of these principles one with another."[44] This type of logic, while possessing some of the characteristics of the Aristotelian logic, is well adapted for use in modern physical science. It has a long history reaching back to Aristotle and includes such eminent names as Descartes, Leibnitz, DeMorgan, Boole, Venn, Whitehead, Russell, Frege, Couturat, Peano, and Royce.

3. **Modern non-symbolic and non-Aristotelian logic.**—By far the greatest number of studies and treatises on logic since 1900 are non-symbolic and non-Aristotelian in their emphasis. Embodying the useful parts of the Aristotelian logic, they go on to develop the principles and methods of inductive thinking as urged by Francis Bacon (1561–1626) and John Stuart Mill (1806–1873), and add, with varying emphasis, the more recent methods of scientific explanation in terms of causation, probability, statistical averages, and functional relations. This general type of logic has been developed in at least four directions by as many schools of philosophy. As might be expected, each form of logic exhibits the spirit, method, and principles of the philosophy which created it.

a. Realistic non-symbolic logic is close to symbolic logic in spirit and method, but it employs written language instead of mathematical symbols. It desires to adapt logic as a science to the requirements of present-day empirical and exact science. Realistic thinkers differ considerably among themselves on conceptions of the knowing mind and its relation to the object known, also upon conceptions of truth and error, but they agree in emphasizing the relational character of all knowledge. Among English studies which represent this standpoint, L. T. Hobhouse's ''The Theory of Knowledge,'' and Bertrand Russell's ''Analysis of Mind'' may be mentioned; among American scholars, the coöperative works, ''The New Realism'' and ''Essays in Critical Realism.''

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[44] "Survey of Symbolic Logic," p. 1. (University of California Press, 1918.)

b. Pragmatic logic—otherwise named *instrumental logic, dynamic logic, humanistic logic, concrete logic*—practically identifies logic with the psychology of reasoning. Recognizing no fundamental distinction between *process* and *product* of thought, except in the degree or extent to which the activity of thought and experience has been carried, pragmatic logic stresses the unity of reflective thinking with processes of human adjustment in life. Since adjustment is never complete, thinking is never finished, and truth is never final. Percepts and concepts have their meaning in what they lead to in further experience. Pragmatic logic, therefore, insists that there are no gaps between the affective states, which merge into perceptions, which in turn merge into concepts, and these into judgments and systems of judgments. Even the abstract form of reasoning in mathematics and symbolic logic finds its place in this concrete, human problem of living and making satisfactory adjustments in life. Leading exponents of this type of logic are C. S. Peirce, J. M. Baldwin, William James, John Dewey, and F. C. S. Schiller.[45]

c. Idealistic logic had its origin chiefly in the logical treatises of Kant and Hegel, two German logicians of the late eighteenth and early nineteenth centuries. These logicians and their disciples after them have emphasized the importance of studying human experience, both individual and collective, and of observing the principles and laws according to which the mind operates. Accordingly it stresses the significance of the growth and transformations of thought, of inquiry into the nature and validity of knowledge, into what is involved in an experience of meaning and understanding, and of what laws or principles are implicit in thought itself. Thinking is regarded as both a process of developing a systematic body of propositions which constitute *knowledge* and a process of constructing *reality.* The structure of thought will therefore be identical with the structure of reality. Thus logic and metaphysics are intimately related. Recent exponents of this type of logic are F. H. Bradley, Bernard Bosanquet, and Josiah Royce. D. S. Robinson's "The Principles of Reasoning," an elementary textbook, is prepared from the same point of view.

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[45] See especially C. S. Peirce, ''Chance, Love and Logic'' (Harcourt, Brace & Co., 1923); John Dewey, ''How We Think'' (D. C. Heath & Co., 1910); Boris B. Bogoslovsky, ''The Technique of Controversy'' (Harcourt, Brace & Co., 1928); Edwin A. Burtt, ''Principles and Problems of Right Thinking'' (Harper & Bros., 1928); O. L. Reiser, ''Humanistic Logic'' (T. Y. Crowell Co., 1930).

d. Intuitional logic, though not developed so fully or explicitly as the types already mentioned, appears as a rather distinct type of thinking. If the logic of Aristotle was *deductive,* that of Bacon and Mill *inductive,* that of Peirce and Dewey *conductive,* then intuitional logic is *productive.* This type of logic is productive in the sense that when the parts of experience, for example, feelings, percepts, concepts, and so forth, are combined into a whole or totality in an act of intuition, what we have is a knowledge content that cannot be analyzed into its elements. That is, the whole insight is to be explained neither in terms of the parts taken separately nor the parts taken together. True knowledge, thus, is a creative synthesis. This type of logic stresses the rôle of instinct, feeling, emotion, and sentiment, will and purpose, along with the intellect, as important in real knowing. Suggestions of this type of logic are present in many philosophies,[46] particularly in mysticism, the various forms of idealism, and, to some extent, in pragmatism. Henri Bergson and his disciples are the chief exponents of this form of logic.

B. Epistemology

Epistemology is from the Greek ἐπιστήμη, *knowledge,* and λόγος, *word* or *discourse,* and means theory of knowledge. As a philosophical discipline, theory of knowledge is a critical and systematic study of the *origin, nature, relevancy,* and *criteria* of human knowledge. Naturally it is closely related to psychology as a descriptive account of knowing, to logic as a normative study of the principles and conditions of knowledge, and to metaphysics as a systematic inquiry into the nature of reality and value. The problems of knowledge, reality, and value are so intimately related that it is impossible to treat one of them without touching upon the others. On this account epistemology is sometimes discussed under logic and sometimes under metaphysics. Since the seventeenth century, when Descartes and Locke introduced it into modern philosophy, epistemology has been at the center of philosophical discussion.

C. Metaphysics

The word *metaphysics* is derived from two Greek words, μετά, *after* or *beyond,* and φυσικά, *physics.* Thus the term originally meant that which is beyond physics. It probably owes its origin, as A. E. Taylor says, "to the fact that early editors of Aristotle placed his writings on ultimate philosophical questions after his physical treatises."[47] There is a difference of opinion among philosophers at present as to just what field metaphysics should cover. All agree that it should treat of the *structure and meaning of reality.*

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[46] *Cf.* the writings of J. E. Creighton, Bernard Bosanquet, Josiah Royce, W. M. Urban, and N. O. Lossky.

[47] "Elements of Metaphysics," p. 1.

Some philosophers would include theory of knowledge under metaphysics, others would exclude it. Still others, e.g., Professor J. A. Leighton in "Man and the Cosmos," give it a very inclusive scope and identify metaphysics with systematic philosophy. Metaphysics or systematic philosophy, from this latter point of view, would be a critically reasoned and systematized discussion of theory of knowledge, theory of reality, and theory of values. Since metaphysics attempts to view the world and experience whole, to organize and interpret the categories of thought into a single, coherent system, it would seem to be one with systematic philosophy. Metaphysics is thus the most comprehensive of the philosophical disciplines. In it all of the philosophical problems and issues converge.[48] Is the world, fundamentally, mind or matter? Is the universe a mammoth machine or is it a great person? Is it a grand unity or is it an aggregate of many separate parts? Is there a God, or not? Is man free, or determined? Will truth, goodness, and beauty prevail throughout the cosmos, or are they fictions of the human mind?—such ultimate and far-reaching questions as these are the objectives of metaphysical reflection.

D. Ethics

Ethics is the science of moral values in individual and collective human life. It is reflective study of conduct and character, not as natural facts so much, but as possessing value in view of a standard or an ideal. Therefore, like logic, ethics is a normative science. Taking account of man's biological, psychical, and social nature, ethics is concerned to define the nature of the *good* as a standard for voluntary conduct. Such a standard will necessarily reckon with the physical circumstances and institutional conditions of human existence. Ethics has a descriptive aspect, but this is subordinated usually to the main interest of defining the *good life* or of indicating the principles by means of which the good life is realized. Because of the wide and diverse bearing of ethical inquiry, this science will draw heavily for material from psychology and the social sciences generally.

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[48] *Cf.* J. A. Leighton, "Man and the Cosmos," Ch. I. (D. Appleton and Co., 1922.)

There are several branches or fields of ethics: 1. Historical ethics,—a history of moral customs, beliefs, and practices, beginning at any point the writer chooses, perhaps with primitive man, and ending with some more advanced stage of culture or civilization; for example, Western civilization from the ancient Greeks and Romans to the present time. Such a study may be limited to a genetic study of ethical theories. 2. Comparative ethics,—an investigation of the resemblances and differences in moral customs, beliefs, and practices among diverse races, peoples, civilizations, religions, or groups. 3. Social ethics,—an inquiry into the moral relations of groups as subdivisions of society; for example, races, nations, classes, and so forth. 4. Business and professional ethics,—a phase of social ethics concerned with the moral practices and standards in the business world and in such professions as teaching, law, medicine, engineering. 5. General ethics is usually an introductory survey course on the main problems and fields of ethical science. It will examine morals in the process of change, development, and evolution. It may examine and compare the leading historical theories of the good life. Upon this background of knowledge of man's nature, his desires, wants, and interests, upon an acquaintance with the history of man's moral experience and a comparative appraisal of moral values, such a study may erect a constructive theory of the ethical ideal. From another point of view, this will be nothing more than an attempt to indicate in what kinds of activity man probably will find his deepest, truest, and most lasting satisfactions.

E. Social Philosophy

Social philosophy is closely related to ethics in that it is interested in values, and, from another side, it is related to sociology, because it is concerned with social institutions and processes. Some sociologists, for example, Vincent Small, would include it in the general field of sociology, while others, for example, Durkheim, would exclude it. Social philosophy may be defined as a reasoned consideration of the ends and values of such institutions or social activities as the family, the state, business, industry, education, law, and religion or the church, as elements in a unified and balanced culture. Its point of view is that a culture or civilization, though made up of many institutions, functions, and processes, is nevertheless more or less organic in its nature. Thus in its study of social institutions it will endeavor to know what contribution each is making or could make to the whole of society. In method it will be both descriptive and normative; that is, it will wish to know the facts, then it will compare, and at last it will set up a constructive ideal. Obviously such a study will draw heavily upon the social sciences. Separate and rather independent studies are now being made under such heads as: Philosophy of the State, Philosophy of Education, Philosophy of Law, Philosophy of History, Philosophy of Science, Philosophy of Religion, and so forth, but in reality each is an aspect of the more comprehensive inquiry—Social Philosophy.

F. Esthetics

Esthetics is the science of the beautiful. Like ethics and logic, it is one of the normative philosophical disciplines and deals with value. In this case, however, it is the meaning and worth of beauty that is studied. Esthetics has a number of aspects or interests. For example, it may investigate the origin and nature of the art impulse. Such a study would be largely psychological. It may study historically the varied forms of art in which the esthetic motif in human nature has expressed itself; for example, in sculpture, painting, architecture, poetry, and music. It may devote attention to the historical theories of the beautiful in the different fine arts. Or, it may attempt to set up and define an ultimate standard of beauty, relating it as a value systematically with truth and goodness. This latter type of treatment would, of course, make esthetics an element of metaphysics.

G. Other Philosophical Studies

Since courses are offered in colleges and universities under such titles as History of Philosophy and Introduction to Philosophy, a word of explanation may be offered here on the aim and content of such courses.

1. **History of Philosophy.**—A history of philosophy aims to give a connected account of the origin, growth, and development of reasoned thought from the earliest beginnings of a civilization down to its latest times. This, as Professor Frank Thilly remarks, is "not a mere chronological enumeration and exposition of philosophical theories, but a study of these in relation to one another, the times in which they are produced, and the thinkers by whom they are offered."[49] Writing of what he conceives the development of philosophic thought to have been in Western civilization, W. Windelband says: "The History of Philosophy is the process in which European humanity has embodied in scientific conceptions its views of the world and its judgments of life."[50] The philosophers of any period and the philosophical systems of any age (or the lack of systems) naturally reflect one or more of the intellectual, political, economic, moral, religious, and esthetic conditions of the existing social life. The character of preceding systems as well as the personality of the thinker

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[49] "History of Philosophy," p. 1. (Henry Holt and Co., 1914.)

[50] "History of Philosophy," p. 9. (The Macmillan Co., 1905.)

affect to a greater or less extent the spirit, method, and content of the philosophy in any period. Man's social and cultural life is organic in nature, philosophy being but one of the elements in the complex pattern of his intellectual environment. A history of philosophy, therefore, attempts to show in what respects philosophy is affected by such other elements as, for example, the dominant views in science, morals, and religion; and, in turn, how philosophy affects or determines the currents of intellectual life in the future.

2. **Introduction to Philosophy.**—At the present time introductory courses in philosophy, though variously named, usually take the form of a problems course, supplemented by a historical and cultural emphasis. Such courses aim to show those beginning the study of philosophy that philosophical questions are implied in and emerge from the experiences of common life, religion, morals, law, and the sciences. Having raised the questions, described their setting in human experience, and pointed out their implications for human life and institutions, the history of philosophy and present-day philosophical discussion are consulted for the most reasonable methods of treatment and the most satisfactory solutions. As should be expected, constructive conclusions will reflect a knowledge of the entire history of philosophy and the relevant truths from the sciences and common life. It is further intended that the student shall become familiar with the vocabulary used in philosophical literature, that he shall become informed on the spirit, life, and writings of the outstanding philosophers, and that he shall carry away with him from the study an equipment which shall enable him to read and discuss philosophical literature intelligently.

H. Summary of Philosophical Disciplines

The above account of the divisions of philosophy is a somewhat detailed description of the main philosophical disciplines. If a more compact grouping of philosophical inquiries were desired, we should have it in the four chief divisions of systematic philosophy, namely:

1. **Epistemology.**—As previously indicated, epistemology is an inquiry into the origin, nature, extent, and criteria of knowledge. Inseparable from these questions is the problem of the relation of knowledge, existence, and reality. Chapters V, VI, VII, and VIII of this course are designed to introduce the reader to this phase of philosophy.

2. **Cosmology.**—This word is of Greek origin (κοσμός, *world,* and λόγος, *word* or *discourse*) and means a study of the constituent elements, structure, and order or types of order in the world. The working concepts of the sciences and common life are appealed to in order to secure light upon such questions as the nature of matter, space, time, life, evolution, mechanism, purpose, God, and evil. Part III, Chapters IX, X, XI, and XII treat the problems under this head.

3. **Ontology.**—This is another word of Greek origin (ὄντα, *existing things,* and λόγος, *word* or *discourse*), and it means a study of the stuff of which the world is made in terms of *what kind* and *how many.* As we shall see in Chapters XIII and XIV, where these problems are discussed, there are dualism, materialism, idealism, neutral monism, and evolutionism to be treated under *kinds of stuff,* qualitatively viewed. From the viewpoint of *how many,* that is, reality or being viewed quantitatively, we shall discuss singularism and pluralism. In the present work ontology, for the sake of convenience, is treated under the general heading of cosmological conceptions.

4. **Axiology.**—This word is also a Greek derivative (ἄξια, *values,* and λόγος, *word* or *discourse*). It means a theory of the origin, nature, and place of values in the world. Values are classified usually into three main types as follows: moral, esthetic, and religious. Truth as a value is ordinarily treated under epistemology. The problems of value and related questions are discussed in Part IV. Since from our standpoint values have their being in and

through selves, in Chapters XV and XVI, we introduce the axiological discussion with a treatment of the psychological nature of the self, the problem of freedom, and the question of immortality. Chapters XVII and XVIII continue the study with a critical examination of the nature, locus, and classification of values. Chapters XIX and XX of Part IV conclude the book with a statement of the cosmical importance of value.

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[1] A revised edition of this book is to appear during 1930.

CHAPTER II

THE VALUES AND DIFFICULTIES OF PHILOSOPHY

IT IS characteristic of American students to ask: Of what use is this or that subject in a college course? The men of the world put the same question. The question is therefore certain to be raised: Why study philosophy? It is doubtful whether this question can be answered for the person who is still a novice in the field. It may even be impracticable to attempt to offer an explanation so early in the study, since the whole course is intended to introduce the student to the place and value of philosophy as an academic pursuit. However, since the question arises so early and is so persistent, it may as well be answered now and reference be made to it later.

Students also have the notion that philosophical reflection represents a type of study which should be undertaken by a very few individuals peculiarly gifted for such intellectual activity. Not only students but many generally intelligent people outside of college halls entertain the idea that success in philosophy requires a unique, almost otherworldly capacity. They identify philosophical speculation either with knowledge that is so profound and intricate that ordinary undergraduates cannot hope to fathom its mysteries or with knowledge which is too ethereal and sublime for the average human mind. That there are certain prerequisites for proficient philosophical thought we readily admit, but that these conditions are not possible for the average man or woman to meet we emphatically deny. We shall try to show that both the values and the difficulties of the study of philosophy are considerations which should provoke the college student and, for that matter, the general reader to a persistent and enthusiastic examination of the subject. We shall first indicate the worth-whileness of philosophical study.

A. The Fruitfulness of Philosophy

1. **It is practical.**—We shall take the proverbial "bull" by the horns and try to show, contrary to popular belief, that the study of philosophy is practical. Novalis said, "Philosophy can bake no bread but she can give us God, freedom, and immortality." It may be doubted reasonably whether philosophy *gives* us God, freedom, and immortality, or even, as Professor Calkins says, whether it gives us anything. Values easily got are invariably prized lightly. We are to be very sure that philosophy bakes no bread, but it gives richer meanings to the life of the baker and adds significance to the baking of bread. Narrow and nearsighted utilitarian aims, cash values, material returns, —these are not and never have been the motive of philosophy. Nevertheless, there is truth in the statement of Gilbert Chesterton, namely, "It is more important that a landlady should know her boarder's philosophy of life than his bank account."

The kinds of questions we ask are as much indicative of our beliefs and conceptions as our positive assertions. May it not be that the present-day clamor for the practical is symptomatic in part of a false theory of values? It may be that man can live by bread alone, but, if so, then a bread-and-butter philosophy of life should be defended openly and without intellectual reservation. But who without shame and reflection upon his personality and intelligence can ask: Of what use are poetry, music, and flowers? A man's stomach may be full, he may have clothing and shelter, he may be free from poverty and disease, and have at his command all the physical comforts of our modern civilization,—in a word, the body may be satisfied;

but the mind, impelled by wonder and love, will crave its goods of truth, goodness and beauty.

But we must inquire, when is a thing practical? What is its character, what must it do in order to be practical? Certainly we cannot restrict the practical to money-earning power. Philosophy, we believe, will not detract from a man's capacity to succeed financially; on the contrary, it will strengthen his ability to take his place in a prosperous business and professional community. Its real practicality, however, lies in another direction. It is practical: (*a*) in that it cultivates a reflective attitude of mind on all questions; (*b*) because it helps one to view objects, events, persons, and experiences in the full context of their relationship; (*c*) because it stimulates one to think out and think through a reasoned view of the ends and values of one's vocation, of education, industry, the state, morals, and religion; and (*d*) because it gives aid in working out an intellectually respectable conception of the meaning and value of human life. In a word, when a long view of life is taken, it is of the utmost importance that a person should live thoughtfully and appreciatively as a citizen of the community. As a citizen he stands not merely as a money-earning unit, but as a husband and father perhaps, a neighbor taking an active interest in law and order, sanitation and health, the beauty and comfort of homes, the moral welfare of a rising generation. To have an intelligent interest in these things is to view life *in the large,* and that is philosophy. Socrates admonishes us that "the unexamined life is not worth living." Now to be human is to be practical, and to be practical is to examine and reflect upon the ends and values of life, and the proper means of securing these values.

The practical and the theoretical, like the concrete and the abstract, are relative. What to one person is practical to another person may be theoretical. Familiarity and interest determine much in this connection. Mathematics and the logic of scientific method are theoretical and abstract, but they are indispensable means to a knowledge of the concrete, particular objects in the sciences. If by the practical we mean the useful, then such theoretical studies as mathematics and logic are practical. Language study, too, involves much of grammar and rhetoric—theoretical studies, but if one is to have access to the concrete experiences of other linguistic groups, the vocabulary, grammar, and rhetoric of certain languages are the means. Take such words as *democracy* and *education.* What do they mean? The question may be answered by going to concrete, particular cases of democracy and education. But suppose someone asks, What *should* democracy and education mean? At once we are *out* of the concrete and particular and *in* the realm of the theoretical and abstract. It is even an open question whether any definition of either democracy or education can be given without reference to both the practical and the theoretical aspects of the problems. Not only are the practical and the theoretical relative, but they are interdependent and interpenetrative in meaning.

As F. C. S. Schiller aptly remarks, "It may boldly be affirmed that the speculative impulse, both in its origin and its innermost essence is profoundly *practical.* The ultimate questions of philosophy are what we come to when we unflinchingly follow out to their conclusions the practical problems of life: they concern the theory which all practice ought to confirm."[1]

Take, for example, the relationship of fact and theory in science. A theory is based upon facts, and in turn the theory or law explains, or gives meaning to, the facts. Like means and ends which are merely aspects of a total life situation—one an antecedent stage and the other a subsequent stage but more or less interchangeable—such is the relation of fact and theory, and such is the relation of the practical and the theoretical. Just now in America a movement is under way to secure an endowment for research in pure science. And what for? Leaders in the sciences are convinced that if applied science is to be improved, there must be investigation and progress in pure science. Pure and theoretical science prepare the way for practical and applied science.

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[1] "Riddles of the Sphinx," p. 8. (By permission of The Macmillan Co., publishers.)

But is philosophy not "dry" and "heavy"? Our answer is both "yes" and "no." It is both dry and heavy in that it deals with general and abstract questions as opposed to a sole treatment of concrete objects of sense experience. Often philosophy is forced to employ a specialized and technical vocabulary. Philosophy has at times been guilty of exhausting its powers on trifling, hair-splitting controversies in heavy and cumbersome language. On the whole, however, its problems are the perennial questions which fascinate and puzzle every generation. Moreover, it must be remembered that mathematics, astronomy, physics, chemistry, biology, and psychology, to mention no other special sciences, also employ a highly specialized vocabulary. Until one has learned the language of these sciences, they also are dry and heavy. When a student has mastered the technical terms in a study, he discovers in most instances that they are the simplest and easiest terms that could have been chosen, besides being the most useful.

2. Philosophical disciplines are themselves valuable.—In the preceding chapter the different branches of philosophy were mentioned and roughly defined. A review of that section will show how the different interests and problems are dealt with. Logic, for example, studies the principles of reasoning. It treats of the conditions of sound or valid inference. And is it not necessary to think clearly and accurately whether one is a specialist in a professional field or only a person of practical affairs? No other subject makes these problems a special study. Ethics deals with the rules and standards of the moral life. Social philosophy is concerned with the ends and values of human beings as achieved through social life and civil institutions.

Theory of knowledge examines the conscious and unconscious presuppositions of thought. Scientists and writers of religious, moral, political, economic, and educational literature have neither the time nor the interest to inquire thoroughly into these more abstract matters. Poetry, especially, is filled with ideas whose implications need to be examined and criticized. Metaphysics attempts to give a systematic view of the world and of life. These, and the other divisions of philosophy, are specialized inquiries upon questions which press for answers. All through the history of our civilization from the ancient Greeks and Romans to our own time, men have felt not only an overpowering wonder and curiosity to pry into these problems, but they have experienced a deepening joy and contentment in the growing insight which rewards reflection and study.

It is the special task of one or another of the philosophical disciplines to examine conclusions or products and presuppositions of the sciences, treatises on morals, religion, and art. Ends vary in the degree of their ultimateness. Some are instrumental almost entirely, while others are intrinsic in their worth. A discipline is needed to coordinate and systematize the aims and goals of our specialized interests. Views and results worked out in one field and in total disregard of conclusions in other fields, as is the case in several of the sciences, stand in constant need of comparison and articulation. Quite as great is the need of comparing and systematizing the conscious and unconscious assumptions of specialized treatises. Specialists are often creatures of their own age in that their preconceptions are determined by a provincialism of some sort. Whether he wills it or not, the scholar in any field must begin with certain premises which it is neither his interest nor business to establish. These premises are what most investigators in the field probably would regard as sufficiently self-evident for use as a beginning. From these axioms, definitions, or assumptions, inferences are made and investigations carried on.

Does philosophy make assumptions? Has philosophy any preconceptions? There can be no thinking, no movement of thought towards truth that does not assume the trustworthiness of experience when criticized and examined. We must assume, as Professor Hocking suggests, that things have a meaning, that we can know them, and that it is worth while to do so. Philosophy must accept the integrity of mind and the mind's capacity to criticize and validate its own processes. This is the minimal presupposition of philosophy, and, in fact, of all knowledge. Now as to the preconceptions of philosophy. All that can be said on this point is that philosophy takes as its problem the *criticism* of preconceptions. No other discipline undertakes to do this systematically. Despite the fact that philosophy has accepted *criticism* as its task, the history of philosophy offers many examples of men, who, laboring under the delusion that they had cleared the ground of all unwarranted assumptions, found their contemporaries or successors felling their intellectual structures by pointing out faulty groundwork. The criticism of assumptions, preconceptions and conclusions is a work which needs to go on continuously in the light of history and new knowledge.

3. **Philosophy gives wholeness to knowledge.**—In viewing the relation of philosophy to the sciences and to the moral, religious, and esthetic experiences, we had occasion to see that philosophy marks another step in the mind's effort to unify knowledge and all the realms of experience. Reason can tolerate no loose ends; the life of mind is one, hence truths in the manifold must find their places in a harmonious and ordered body of truth. This demand for consistency or non-contradiction holds true within any particular science or realm of experience. It obtains in the moral and religious realms just as it does in any part

of the physical world. Philosophy is just the culmination of that universal and persistent tendency in the life of reason to seek wholeness and consistency of view. Philosophy thus aims to give one composite picture of all the specialized interests of life. The sciences, moreover, disclose facts, theories and laws in their descriptive and causal account of man and the world. They are bent on providing ways and means. Philosophy, on the other hand, is synoptic, synthetic, and interpretative; it is concerned with the broader aims, ends, and values of life; it gives us our world of appreciation. With ends and values reflectively achieved, with general principles established, illumination and guidance are at hand for every practical activity of life.

4. **It stimulates a reflective attitude.**—There are no bare facts. Facts are always items in a physical or social configuration and setting. Meaning appears only when insight is gained upon the total relevant situation. Moreover, facts do not come before an observer labeled and classified. This must be done by the investigator, and there is nothing to guide in this process but clearness and definiteness of purpose, together with a sound sense of the logical relation of things. In the construction of theories, laws, and the still higher generalizations of world view and life view, the powers of penetrative insight are called into use. The child is largely under the control of its inherited traits, feelings of pleasure and pain, emotions of fear and of the activities of imagination. These are brought into activity almost entirely by stimuli from without. Primitive man has not emancipated himself from the group and has only begun to control his feelings, emotions, and imagination. It is the privilege of the reflective, scientific man, on the basis of a reasoned descriptive knowledge of nature and himself, to take a conscious and purposive part in controlling nature and guiding the destinies of his own life. Aristotle held that the end or purpose of anything is to realize and develop its unique capacity.

The distinctive capacity of man as compared with animals is his power of reasoning about the matters of his experience. We should agree that what gives dignity and worth to life is man's ability to treat the day's work, the events and circumstances of life, reflectively. This means that he may, if he will, view any present situation in the light of the past and the possible future, both his own and that of others. Thus through purposive reflective activity man transcends the time limitations of the present and the past, and creates his own future.

5. **It teaches how and what to question.**—Sometimes it is argued against philosophy that it solves no problems and answers no questions with finality. Unlike the sciences, which give definite answers to pressing practical questions, it is said, philosophy is always raising more questions than it answers. Let us pause a moment and ask one question at a time. Does any science give a sure and final answer to any important question? A little reflection upon the history of any science, say for example, chemistry, physics, biology, or psychology, will reveal that nothing is more changeable in knowledge than the sciences. It is this, in fact, that serves as the truest test of their vitality and growth. "There is nothing in the world as ephemeral as scientific theory, nothing so musty and ancient as old scientific theory. Scientists jeer at philosophers as people who make a living by refuting one another's theories, but really the jibe is as true of scientific men."[2] Mature scientists to-day are very modest and cautious in their statements. Furthermore, it may be said that the sciences raise more questions than they answer. The sciences collect facts and organize them into laws and theories. It is on the point of the higher generalizations—and these are the important considerations in the end—that scientists differ among themselves. Are there not schools of medicine, schools of political theory, of psychology, of history, of economics, of biology, and even of mathematics and phys-

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[2] A. D. Ritchie, "Scientific Method," p. 14. (Harcourt, Brace and Co., 1923.)

ics? This situation is just what one should expect, knowing that the facts are not all in and that men approach their problems with different presuppositions and aims. Philosophy too has undergone changes and development in its history. There have always been schools and points of view in philosophy. They also bear witness to the fact that man's knowledge is not perfect. These schools and opposing views supplement each other and stimulate further search and inquiry. Not more than any of the special sciences has philosophy been able to give dogmatic and certain or final answers to its problems. The truth is, dogmatism has been a prevailing weakness of both the sciences and philosophy.

Now philosophy, like the special sciences, we believe, is increasing the extent and quality of man's knowledge. It is enriching his understanding and appreciation of the world. However, philosophy amply justifies its existence and rewards the student if only it teaches what questions may and what questions may not be asked rationally. To quote Professor Calkins. "If philosophy is no more than a questioning, at least it formulates our questions, makes them consistent with each other; in a word, makes us capable of asking intelligent questions. It is good to know; but even to know why we do not know may be a gain."[3] There is truth in Bertrand Russell's statement that "The value of philosophy is, in fact, to be sought largely in its very uncertainty. The man who has no tincture of philosophy goes through life imprisoned in the prejudices derived from common sense, from the habitual beliefs of his age or nation, and from convictions which have grown up in his mind without the coöperation or consent of his deliberate reason. To such a man the world tends to become definite, finite, obvious; common objects raise no questions and unfamiliar possibilities are contemptuously rejected."[4] Philosophy renders a distinct service when it makes us aware of our preconceptions and teaches us how to question them. It is a similar motive which prompted Kant to say, "There is no philosophy, there is only philosophizing." Knowledge we need, truth perfected and completed we crave, but after all there is quite as much satisfaction in the pursuit as there is in the realization. We are always setting up ideals, aims and goals of endeavor, only to partially or completely realize them; but immediately we set about to erect greater and higher goals.

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[3] Mary W. Calkins, "Persistent Problems of Philosophy" (1925), p. 12. (By permission of The Macmillan Co., publishers.)

[4] "Problems of Philosophy," pp. 242–243. (Henry Holt and Co., 1912.)

6. It dissolves both dogmatism and skepticism.—At opposite poles of experience and knowledge lie questionable attitudes of mind both of which need the clarifying light of philosophy. They are rigid dogmatism and half-hearted skepticism. Dogmatism, whether conscious or unconscious, may be due to blind acceptance of tradition or authority; it may result from unwarranted assumptions or from preconceptions about human infallibility. Dogmatism is commonly supposed to exist in the realm of religious belief and in morals. The close relation of both the religious and moral experience to feelings and emotions as well as to the influence of tradition, makes it easy and natural that dogmatism should prevail in these realms. Witness with what difficulty and opposition, for example, historical and critical studies of the Bible and comparative religions are taken up. Religion and morals are conservative and little criticized aspects of human experience. But dogmatism also prevails in the realm of the political, economic, and institutional aspects of life. There is a tendency here also to make tradition and authority the final court of appeal. The reasons why there is reluctance to examine freely and open-mindedly these questions are not unlike those which close the door to criticism of religion and morals. The reasons are psychological—habit, custom, presuppositions, and preconceptions.

Dogmatism may even be found in the science of psychology, a discipline in which one would least expect to find it. That it should appear conspicuously in the writings of that school of psychology which attempts to make psychology a "pure, objective, experimental branch of natural science" is doubly surprising. This attitude is evident in the criticism which extreme behaviorists offer against opposing schools of psychology and against philosophy in general. The abrupt manner in which the methods and results of other psychologists are waived aside or consigned to the limbo of superstition, the reckless inferences and applications which are made upon the basis of preconceptions and assumptions lacking justification are startling to anyone with a sense for logical proprieties. Few religious dogmatists, to say nothing of philosophers, have been more heedless of the principles of sober reflection than some of the advocates of this new psychology. The history of psychology, either the earlier or more recent, gives no ground for arrogant confidence in one method and the wholesale rejection of all others. Certainly the modesty and fine reserve of science has lost its poise in this type of psychology. Few will arise to question that behaviorism as a psychology has proved its worth as *one point of view and approach.* Its utility is not even yet exhausted; it will continue to be fruitful in the future as it has been from the time of Plato down to our own time. But that it is entirely adequate as a method to give a descriptive account of man few who face all the facts without blinding preconceptions will yield assent. All forms of dogmatism stand in need of philosophy, which, as F. H. Bradley said, aims "to become aware of and to doubt all preconceptions."[5]

On the other hand and at the opposite pole of experience is a weak, capricious, and whimsical skepticism. Philosophical skepticism will be treated later. Here we propose only to call attention to a type of false intellectual pride, namely, flaunting, vociferous unbelief. We are not arguing that anything in particular shall be believed in religion, morals, politics, or social matters. We are suggesting that before intelligent questions can be asked, one must know the history of the idea, doctrine, or institution with which he is dealing. One must be more concerned with finding the truth than in finding any particular view false or true. This spirit of critical inquiry, which is essentially the philosophical attitude, will lend an atmosphere of sincerity. Insight and understanding are likely to follow. One's self-styled skepticism of the views of others on politics, economics, religion, and morals is defensible if such views are founded on mere credulity, tradition, or authority. It often occurs, however, that the advocate of a view is prepared to give reasons for his belief. A careful review of the history of thought will reveal that there have been very few thoroughgoing skeptics. Moreover, the most thoroughgoing skeptics were the most quiet and unassuming. The fact is that most skepticism is only half-hearted and poorly informed on the real grounds of knowledge. It is this puerile skepticism, a skepticism which is neither able nor willing to doubt to the end, that is often blatant and intolerant. This type especially needs the sobering and stabilizing influence of philosophy. One cannot long travel the difficult road of doubt until he becomes aware of the fact that intelligent doubting is the most strenuous activity in which the mind can engage. Sooner or later it will become apparent that doubt is neither the *beginning* nor the *end* of thinking. Doubting, to be profitable, requires a fund of well-organized knowledge. Since doubting that is worth while must begin in knowledge, it must also end in knowledge. Rational doubt, the true skepticism, therefore is a means and not an end of reasoning. Philosophy will help to raise skepticism out of the plane of whims, fancies, and sentiments to the high level of rational inquiry. Philosophy itself, in fact, is a kind of skepticism; that is, a skepticism defined as critical and reflective inquiry.

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[5] "Appearance and Reality," p. xii. (The Macmillan Co., 1902.)

7. **It mediates between science and religion.**—Science and religion are more or less in conflict. Within Christianity the debate has been particularly heated since the thirteenth

century. Up until the thirteenth century science and religion were on more friendly terms. In the primitive state of society science and religion exist only in a rudimentary state and both exist in an undifferentiated whole of experience. Under these latter conditions there could be no conflict. In the Middle Ages the Roman Church was the guardian of science and religion, and even of philosophy. Here a great and powerful institution, accepting religion as the preëminent interest and value for man, controlled what should be taught in science and philosophy. It determined what should be taught and believed about itself, the Bible, the plan of salvation, and the origin and nature of the physical world. It is true that in many communities to-day, Protestant and Roman Catholic, the Bible and the Church are the most influential teachers on matters of science.

In the thirteenth century, a period just prior to the earliest beginning of the modern scientific movement, religion was differentiated from both science and philosophy. This separation was made by the theologians in the interest of religion. Certain dogmas of the Church such as the doctrine of the Trinity, Incarnation, Atonement, and Transubstantiation could not be proved or demonstrated logically; they were held to be matters of revealed truth and proper subjects for faith. The objects and processes of nature, which were the proper study of science, were subject to different intellectual canons and principles. In consequence there appeared the doctrine of the twofold truth; that is, what may be true in science need not be true in religion. Science, which deals with secondary causes, need not accord with religion, which deals with ultimate causes. This separation might not have been so serious in its consequences had the Church relinquished her control over scientific belief. But in the centuries that followed she discouraged the scientific study of nature; she rejected and opposed the Copernican astronomy; she persecuted scientific men like Galileo and Bruno who were studying and explaining nature empirically. Natural science, she feared, would undermine and upset faith in the Bible and the dogmas of the Church. To fully appreciate the seriousness of this early controversy it is necessary to know what beliefs and practices were sheltered and fostered under the protecting authority of the Church, not only in religion but also in government and education, as well as the economic life of the people. Professor W. T. Marvin has pointed out the fact that the powers that persecuted Galileo were scientific and political as well as religious. He suggests that the struggles of the Renaissance and general Reformation were the growing pains of science, of morality, of art and politics, no less than of religion, and were due, not to any one factor, but to the total situation of civilization at that time.[6]

This separation of revealed knowledge from natural knowledge in the thirteenth century marks one of the historical factors and conditions of the present conflict between science and religion. A second important factor is the rise and prominence of the doctrine of biological evolution in the nineteenth century. The idea of evolution is as old as the ancient Greeks, but in Charles Darwin's "Origin of Species," published in 1859, and the "Descent of Man," published in 1871, the biologists were offering not only a naturalistic explanation of the origin of plants and animals, but also of man. Geologists quickly came to the support of the biologists by presenting the record of plant and animal life in the strata of earth and rock. These views, it was held, contradicted the recorded Word of God in the Genesis account of creation. But still a third issue fanned the flame of controversy to a whiter heat. Beginning in the nineteenth century and continuing to our own day, critical and historical studies on the origin of the books of the Old and New Testament were introducing the methods of science to the study of religious literature. Social and historical inquiries into the origin and development of the Hebrew religion and Christianity; social and historical studies of the non-Christian religions and comparative religion—all of these tended to deal a damaging blow to the current supernaturalism in Christianity. The present controversy over what is named Fundamentalism and Modernism cannot be understood apart from these historical roots in the conflict between science and religion.

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[6] "Introduction to Philosophy," p. 840. (Lemcke and Buechner.)

One may be aware of these historical angles of the conflict and yet not understand all. It should be observed, first of all, that the conflict has been one between scientific views and theology, and not so much between science and religion. Naturally, as the theoretical conclusions of both science and theology have changed, the battle line has shifted. Secondly, the attitude of mind, the method and spirit of religion, differ from that of science. Religion is grounded largely in feeling and emotion; it makes much of tradition and authority; it is relatively uncritical, deals with final causes, and accepts much on faith. Science, on the other hand, deals with its objects or material with restrained and controlled feelings; it criticizes tradition and questions authority; it demands empirical evidence, it deals with proximate causes, and demands proof for what it believes. Religion, moreover, deals with wholes and is synthetic; science deals with parts and is analytic. Thirdly, when both science and religion are properly understood and their respective realms critically defined, they will be seen to supplement and support, not contradict, each other. Philosophy, with its appreciation for all realms of experience, with its respect for the part as well as the whole, with its detachment and spirit of tolerance, may play a useful rôle in reconciling the parties and interests in the conflict.

As is usually the case in controversies, much of the conflict is due to a misunderstanding on both sides as to what properly belongs to science and what belongs to religion. Complete knowledge is not even now at hand to resolve this question. Certainly it may be said, however, that science may lay claim to the right to describe in causal terms any part of the physical cosmos. It has a right and duty to speak on ways and means, and on proximate ends. In a word, science has the right to describe and explain the whole world of existence in terms of its concepts and principles. Religion, on the other hand, finds its realm in ideals, in ultimate causes and in values. Science must give its light even here by telling us what man is and what the world is, but religion must fuse the separate ideals, ends, and values into the unity of a single conception of value and then generate the spiritual enthusiasm and moral passion to pursue the goal. Religion is essentially an attitude of faith in the intrinsic worth of man and his high destiny. It is also a faith in the fundamental goodness of the universe. Out of and upon this foundation of confidence the scientific mind inspires and invigorates its own native curiosity to know. In the end, therefore, it is faith that is at the root of both science and religion. In the individual they are aspects of experience and life which must serve each other. The same is true in a well-ordered civilization.

A philosophical view of the matter, then, requires that our conception of the *natural* and the *supernatural* must undergo continuous revision, if we are to retain the terms at all. The history of science and religion shows that they have undergone revision from time to time under the influence of man's growing knowledge of himself and the world. There is nothing to forbid anyone using these terms as he likes, provided he defines each, uses them consistently, and refrains from heated objections when someone else employs them differently. Historically, of course, the supernatural was coincident with that above and beyond nature, often the miraculous and contrary to nature. The natural was the realm of the customary and orderly sequences of events. The former was thought to be under the control of a Supreme Being, who upon occasion interposed his power to perform a miracle. The latter was believed to be under the reign of natural law, divinely ordained, but at times interrupted by the Divine Will. There is here more than a faint suggestion that the supernatural might contradict the natural. It is a vestige of the old medieval view that what is true in science may be false in religion. Does it not appear that we have come to the place in our thinking where we can say: religion must not contradict the established facts and principles of science? Science certainly has proved its right to tell us what exists and by what proximate conditions change takes place. The sensuously real and existent, then, is the realm of science. This, however, is but an aspect of the total world; there is also the ideal and the transcendent—the supernatural, and this is primarily the province of religion. From this point of view science and religion are complementaries, not contraries.

8. **Cultivates catholicity and tolerance.**—One could find in the history of philosophy notable examples of provincial and partisan thinking, yet on the whole the greatest philosophers have been catholic in the breadth of their interest and in their consideration for the views of others. Aristotle wrote learned treatises upon logic, rhetoric, poetics, physics, botany, zoölogy, psychology, ethics, politics, and metaphysics, many of which are highly instructive to this day. Leibnitz was informed on languages, in mathematics, physics, diplomacy, history, literature, theology, and philosophy. Herbert Spencer, too, had at his command such sciences as civil engineering, geology, biology, psychology, politics, sociology, ethics, and education, besides an intimate knowledge of much of the history of philosophy. The world and life present many things of interest and value. The particular sciences and studies have widened, enlarged, and enriched the world, yet there is a very real danger that most of us will pass through life content with knowing and appreciating but a small fragment of it. The stern conditions upon which proficiency in any field may be attained contribute to narrowness of outlook. Philosophy with its broad, inclusive interest in all the diverse aspects of life and experience provides the spirit necessary to a fair appraisal of the values in the sciences, in religion,

in the fine arts, and in such social activities as government, law, education and industry. Such catholicity of interest and breadth of view is necessary in a democratic civilization.

Most of us are convinced of the need of more tolerance in the past between science and religion, between the State and the Church, between Churches and between religions, between rival political, economic, and racial groups, but we scarcely see the need for more tolerance to-day. We are so much a part of the contending social forces and so absorbed in our provincial and partisan causes that we are blind to the intolerances of the present. The contacts of races and civilizations of diverse culture; the meeting of many religions on every continent; the conflicting views in almost every country upon matters of government, industrial organization, and education,—these are but a few of the conditions of our time which call for open-mindedness, an attitude of teachableness and forbearance. The rapid and easy means of communication and transportation developed within the last few decades have contracted the whole world into a small community. We must learn to get on with our new neighbors if we and they are to enjoy peace and happiness.

Tolerance is difficult to define. How far should one go in his tolerance of what he believes to be wrong or false in the practices and beliefs of others? Emerson said: ''I hate, when I look for a manly furtherance or at least a manly resistance, to find a mush of concession. Better be a nettle in the side of your friend than his echo.'' Certainly error is to be corrected and evil is to be resisted. Too often tolerance is nothing more than ''—our way of describing our attitude to an opponent we cannot oust. Beneath is jealousy, suspicion, and evil desire,'' as Professor E. A. Ross once said. Now the philosophic spirit will see gain in diversity of culture and differences in civilization; they may supplement each other. It will welcome different standpoints, views and conceptions; they will constitute material for comparison. Yet it will insist that he who advocates a view or policy, he who promotes a cause, may expect to be called upon to defend it and show on what rational grounds it has claim to another's support. It is not to be understood, however, that to be a philosopher is to hold no opinions and to have no convictions or beliefs. The philosopher need not be an intellectually spineless creature of *mere* opinion and supposition. The truth on some questions is difficult and sometimes impossible to obtain. On such issues it is logically and morally appropriate to hold opinion or to suspend judgment. "Cratylus, who finally thought he should say nothing, but only moved his finger" illustrates the plight of one too timid intellectually. What philosophy does encourage—a sound logic and ethic could require no more—is that all beliefs and practices, in whatever department of life, shall be founded upon rational judgments and that they shall always be ready to stand the test of reflective scrutiny. In the words of Professor Brightman, "The spirit that combines tolerance with conviction, open-mindedness with loyalty, yet compromises neither, is a mature product of philosophy at its best."[7]

9. **Helps the individual to find his place in the world.**—Philosophy gives light upon the position occupied by the self in the midst of nature. No other discipline makes this an object of investigation. Only a synthesis of the conclusions from the specialized studies is in a position to do this. Man's place among plants and animals—his continuity with the animal world, yet, in virtue of his intelligence and reason, his marked separateness—offers a problem for reasoned treatment. Just what is man that he is so much matter, yet is alive and can think and know that he is man? How strange that he should be subject to the same necessities and laws as other animals, yet should aspire to truth, beauty, and goodness!

The physical sciences with the aid of such instruments as the telescope and microscope are pushing back the boundaries of space and revealing new worlds of existence. When one considers that our planet with its sun, a dying star, is but a tiny speck of matter among millions of stars, suns and planets, infinitely larger, man's physical dimension pales into insignificance. On the other hand, when it is remembered that it is the same creature who has the power of thought, the capacity of feeling and imagination to comprehend in part, at least, this vast order of stellar bodies, not to mention the wonders of plant and animal life on the earth, man's dignity and worth take on meaning and value. Thus to see one's place in the world is to vitalize the self; it is to give poise and manly self-control to human life. Through powers of observation and reasoned thought he comes to experience and understand in a fragmentary way, at least, that the great world is made of systems within systems, orders within orders, and all behaving with harmony and law, and that man is the knowing spectator of it all.

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[7] "Introduction to Philosophy," p. 21. (Henry Holt and Co., 1925.)

Furthermore, philosophy assists man in relating himself to the intricate and highly complex social order of which he is an element. In the first place, society is made up of interpenetrating and overlapping institutions—the family, the state, the church, and industrial organizations, etc.,—each one in itself a society. In order that man may take his place in the complex pattern of present-day society and relate himself constructively to these cross-currents of life, it is necessary that he have a perspective of the whole and a sense of comparative social values. It is the province of social philosophy to give light upon this problem. Secondly, the extreme specialization of vocation in modern civilization is in danger of generating narrowness of outlook and a superficial conception of relative social values. There are in America at least six major fields of human activity, with ten to seventeen thousand specialized vocations or occupations. The real ends of human existence can scarcely be found in a mere specialization. If everyone lived for the values of his own specialty, then indeed our existence would be that of the hermit. Every specialization has a value more or less unique and all its own; but its highest and truest value transcends the bounds of its own field. Its real value lies in the manner and degree to which it ministers to the life of the community as a whole. However, only those who can see and appreciate values beyond the niche in which they live and work can share and enjoy the larger social values. The spirit of philosophy will serve to correct and win back the fearful losses necessary to obtain the gains of intensive specialization. Thirdly, accepting self-realization in harmony and coöperation with other selves as the highest ethical goal of which man is capable of conceiving, it appears evident that nothing but a comprehensive grasp of the world and life is adequate to guide him to his goal. Man's truest happiness and progress depends upon his knowing and appreciating the manifold of objects, events and processes in the midst of which his life is lived. His very person, thought, feeling and action, the depth and richness of the meaning of his existence, for their content depend upon this manifold. His moral, religious, and esthetic nature comes to fruition only under conditions of lively intercourse with the outer world. The more man comes to know himself, the more clearly he sees that selfhood is won through orderly contact with nature and society. Human life needs a fulcrum; to change the figure, human life cannot grow and develop in a vacuum. Philosophy not only defines the meaning of self-realization, but it points the way to its fulfillment.

Lastly, philosophy brings the student into acquaintance with some of the greatest thinkers and intellectual leaders of the human race. There is nothing so stimulating and enriching to selfhood and personality as to meet and to know creative minds. In the words of Plato, "there always are in the world a few inspired men whose acquaintance is beyond price."[8] Among the great philosophers of our civilization may be mentioned Plato, Aristotle, Plotinus, St. Augustine, Thomas Aquinas, Descartes, Spinoza, Berkeley, Hume, Kant, Hegel, Spencer, William James. One neglects these thinkers at his intellectual peril.

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[8] "Laws" (Jowett translation), XII, p. 95.

10. **Philosophy provides esthetic enjoyment.**—Philosophy in an important sense is an end in itself. Philosophic contemplation, like the enjoyment of beauty, is its own justification; it is intrinsically satisfying. Arguing for the contemplative value of philosophy is like trying to prove that a man should pursue health, form friendships, achieve moral character, read poetry, and cultivate an appreciation of music and painting. One inexperienced in the worth of these experiences and values could not be convinced by argument. Their primary value is personal and intrinsic; the meaning of their worth is difficult, if not impossible to convey to others. Having shown the utilitarian ends which goodness and righteousness serve, Plato goes on to say that he who possesses them has "a greater share in pure existence as a more real being." Aristotle extols the ethical value of citizenship and self-development through active participation in the affairs of the world, but he finds in the contemplative life of the genuinely educated man the highest goal of rational living. The joys of Spinoza's *amor intellectualis dei* and the spiritual delight of the speculative mystic's vision of the unity of truth, goodness, and beauty point to the same conception. Bertrand Russell's quieting and exhilarating peace of mind experienced when he turns from the turmoil and strife of the social world to ponder the more permanent verities of mathematics and logic is not unlike the ravishment of the mystic.

Apart from its intrinsic worth, the contemplative life has its practical or utilitarian value. Breadth and depth of perspective in any field is conditioned by rational contemplation. Practical activity and conduct will, in consequence, be directed to more praiseworthy ends. Obviously, therefore, we are not discussing or defending that vacuous and dreamy sort of contemplation which revels in whims, fancies, and idle speculation. But when philosophy keeps its feet upon the ground, when it exercises its imagination upon the verities of science, religion, morals, and art, and contemplates the greatness of the universe, the mind itself is rendered great, and man feels at home in his world. The joy and satisfaction of this experience, we believe, stands in no need of utilitarian justification. In philosophical contemplation of the highest sort man's most unique powers are exercised, his intellectual, moral, religious, and esthetic insights and values are fused,—and, in a word, the consummation of his quest for truth, beauty, and goodness are most nearly realized.

So much for an array of the values to human selfhood accruing from the pursuit of philosophy. Let us now pass to a consideration of the difficulties which the seeker after philosophical truth must meet in the realization of his purpose.

B. The Handicaps of Philosophy

The study of philosophy presents its difficulties. Some of them are unique and peculiar to this discipline and some are not. At any rate to be forewarned is, in part at least, to be forearmed. The student will find it true here as elsewhere that nothing worth while in life is gained or achieved without effort and that the greatest treasures are won at the greatest price.

1. **The terminology is frequently technical.**—Philosophy is an old discipline and has its origin, so far as our civilization is concerned, among the ancient Greeks. It is quite natural that many important philosophical terms are Greek derivatives. This was seen in the very word *philosophy*. The Greeks have left an indelible mark upon most of the sciences, as well as philosophy, by providing them with names. Witness such names as biology, zoölogy, psychology, geology, sociology, anthropology, and ethnology. Furthermore, during its history, philosophical language has been affected by its contacts with Roman, German, French,

and American cultures and civilizations. Very often philosophical language is unnecessarily heavy and cumbersome as, for example, in the writings of Plotinus, Kant, Fichte, and Hegel. On the other hand, the writings of such philosophers as Plato, Aristotle, Schopenhauer, John Stuart Mill, Henri Bergson, and William James are clear and inviting. But no serious complaint dare be raised against philosophy because exact and comprehensive thinking requires the medium of a precise and specialized language. Moreover, the language of the sciences and mathematics, and even of poetry, is open to the same criticism.

2. **Critical thinking upon broad and deep problems often requires unusual interest and effort.**—Philosophy, as we shall see, is a persistent effort to gain insight and understanding of the nature of our world and of ourselves, and their relationship. In dealing with such questions as the physical cosmos, life, mind, knowledge, society, and values, we are treating the basic questions which appear to the human mind. Disinterested reflection upon such problems obviously carries us beyond the bounds of those interests which are physical and momentary. Prejudice, bias, and provincialism of one kind or another are not easy to set aside. Spinoza's ideal, namely, that the philosopher should view the world *sub specie æternitatis* (under the form of eternity) requires that the thinker divest himself of narrowness of mind, as well as of whims and capricious desires. Even if, following Heraclitus, one should choose to regard everything in the world as in a state of flux, an equally firm restraint of thought is required to work out the meaning of life and make adjustments accordingly. Moreover, it must be remembered that reflection, contemplation and drawing inferences are just as natural to the normal mind as impulse and emotional responses, for the former are grounded in the latter. There is nothing unnatural in philosophizing and building systematic views of the world. They are merely the developed form, the

systematized form, of the imaginative thought structures which manifest themselves elsewhere in architecture, painting, engineering, music, and the special sciences. Philosophy differs from these only in being more comprehensive.

3. **A large fund of knowledge is presupposed.**—It is true that everybody philosophizes more or less. As Aristotle said, it is not a question ''whether we will philosophize or whether we won't philosophize, we must philosophize.'' Consciously or unconsciously every normal human being thinks out for himself with such materials as are at hand in the social and physical environment a view of the world and of himself. Even those who decry philosophy as a useless undertaking often carry about with them an inelastic conception of things. Moreover, it is true that whether one has much or little experience and knowledge with which to piece out intellectually his world view and life view, he must begin where he is and with what he has. It will be clear, of course, upon a moment's thought that the philosopher, of all persons, needs facts and information—in brief, knowledge as organized in the special sciences. If he could, *per impossible,* he should be thoroughly informed on the methods, assumptions, and conclusions of all of the special sciences, and, in addition, be an appreciative student of religion, morals, and the fine arts. Since the philosopher deals with the basic realities presented to man and may be expected to have insight into relative meanings and values, his knowledge should be both comprehensive and detailed.

4. **Disrespect sometimes shown for philosophy and philosophers discourages the study of the subject.**—Both philosophy and the philosopher have at times been the objects of ridicule and even of scorn. This opposition is, in part, a just repudiation of philosophy at its worst, that is, the vague speculations and hair-splitting arguments over futile questions which at different times have characterized philosophy. (What discipline has not had its futile thinkers?) Most of the hostility, however, has been due to the difficulty

which the popular mind has encountered in following a rather technical vocabulary as it deals with questions and problems beyond the concrete questions of the sense world. To recognize that any view is popular is to see at once that it probably lacks depth of appreciation and understanding. Thus when it is said that philosophy is the tumble-ground of fancy; that it is idle dreaming about things in general or about the diminishing fragment of the universe unexplored by science; or, in the words of C. D. Broad, ''that it tells us what everybody knows in language that nobody can understand''; or that, unlike the sciences which give information, philosophy looks only to the past and makes no contribution to human progress,—one needs only to remember that such views show no grasp either of the history or present status of the subject.

The philosopher too has come in for his share of criticism and reproof. Aristophanes (5th century B.C.), wishing to deride philosophy, represents Socrates as floating in the clouds and uttering nonsense which was supposed to be philosophy. Louisa Alcott had in mind this type of philosophy when she defined a philosopher as a man up in a balloon, his family and friends holding the ropes and trying to pull him down. In his ''Faust'' Goethe makes Mephistopheles say: ''A speculative fellow is like a beast on a blasted heath led round in a circle by an evil spirit, while all about are pastures green and fair.'' Milton mentions philosophy as one of the pursuits of hell. One group of devils is represented as holding high debate over:

> Fix'd fate, free-will, foreknowledge absolute;
> And found no end, in wand'ring mazes lost.

In the ''Rubáiyát'' of Omar Khayyám are lines which have been applied in ridicule of the philosopher:

> Myself when young did eagerly frequent
> Doctor and Saint, and heard great argument
> About it and about; but evermore
> Came out by the same door where in I went.

Speaking of the absurdity to which man only of all living beings is subject, Thomas Hobbes said: ''And of men, those are of all most subject to it, that profess philosophy. For it is most true that Cicero saith of them somewhere; there can be nothing so absurd, but may be found in the books of philosophers.''[9] And Descartes says: ''But I had become aware, even so early as during my college life, that no opinion, however absurd and incredible, can be imagined, which has not been maintained by some one of the Philosophers; . . .''[10]

There are other and more derogatory criticisms of philosophy. Invariably they come from philosophers themselves. Skepticism and positivism, which question or deny the possibility of philosophy, will be taken up later. Other critical points of view may here be given passing notice. Nietzsche, for example, said: ''It has gradually become clear to me that every great philosophy up till now has consisted of—namely, the confession of its originator, and a species of involuntary and unconscious autobiography . . .''[11] Professors John Dewey and J. H. Robinson hold that philosophy from Plato to Spencer is little more than the rationalizing of preëxisting moral, religious, and political beliefs. Others share this view and hold that the animating motive for most philosophy of the past has been religious belief; that the appetites and desires of the organism, the beliefs and attitudes molded out of early and later social or educational influences are potent in determining a philosophy. That the roots of philosophy are in human nature and that the social influences which impinge upon man's life are determinative for philosophy, no one can doubt. Caution alone, coupled with unbiased reflective inquiry, will save the philosopher from partiality to his cherished beliefs and from an impulsive hostility to his own most despised antipathies, either of which may determine the form and content of his philosophy.[12]

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[9] ''Leviathan.'' Quoted from Rand, ''Modern Classical Philosophers,'' p. 72. (By permission of and arrangement with Houghton Mifflin Co.)

[10] ''Discourse on Method,'' in ''Modern Classical Philosophers,'' p. 111.

[11] ''Beyond Good and Evil,'' p. 10. (The Macmillan Co., 1907.)

Such is the portentous case against philosophy and the philosopher. To the superficial criticisms the words of Robert Louis Stevenson are an adequate reply: ''Some people swallow the universe like a pill. . . . It is better to emit a scream in the shape of a theory than to be entirely insensible to the jars and incongruities of life and take everything as it comes in a forlorn stupidity.'' To the more reasoned criticisms the following pages may be a partial answer.

5. **Conflicting views cause confusion.**—It will be disconcerting to the beginner in philosophy to discover that the great minds frequently disagree on fundamental questions. In fact the diversity of method and conclusion among philosophers may sometimes appear so great as to suggest that, taken over a great period of time, they only cancel out and negative all constructive results. The student will do well to exercise patience under such circumstances and remember that life is a complicated thing, that the world, in the words of Josiah Royce, is ''an inexhaustible treasure house of experience,'' and that men differently constituted in make-up and training are likely to react to the same world in different ways. It is entirely probable that philosophers, like other mortals, comprehend the parts and the whole of the world with unequal clarity and fullness. In studying the views of any philosopher, therefore, time needs to be taken to enter appreciatively into the factors—physical, biological, and social—which conditioned his beliefs. When this is done with a few great philosophers, the tendency to turn away from philosophy because of diversity of opinion will have weakened, if not vanished altogether. Moreover, it should not be forgotten that wherever men generalize upon the facts of experience, whether in science or in common life, diversity of belief is bound to arise.

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[12] *Cf.* J. H. Muirhead, ''Contemporary British Philosophy,'' Second Series, pp. 10–11. (The Macmillan Co.)

This very diversity of belief among the leaders of thought upon the great questions of life should be turned to good account and serve to guide us to the truer and deeper insights. Certainly no thoughtful person will turn away from philosophy because of differences of view among its leaders. Such a person would be like the invalid described by Hegel, who, having been advised by his physician to eat fruit, refused to take apples, pears, and peaches when they were served, on the ground that he had been advised to eat fruit.

6. Philosophy appears to be a presumptuous undertaking.—If it is appropriate for the biologist that he be modest and humble as he attempts to trace out the subtle and ramifying activities of life; if it becomes the astronomer to feel a sense of his insignificance as he peers out through his telescope into the infinities of space at stars millions of light years distant; if the physicist, chemist, psychologist, historian, and sociologist,—if all stand in wonder at the greatness of the intellectual tasks which confront them as they attempt to trace out the types of order or law among the phenomena with which they deal, how much more unassuming should be the philosopher who stands before the gigantic task of fitting the assumptions and conclusions of all of these sciences into a composite picture of the whole! The position of the philosopher before such a task would be ridiculous were philosophy not inevitable. Man simply will philosophize; action and purposeful living require it. But he may enter upon his task, if he will, with as much intellectual capital in the form of knowledge as it is possible for him to marshal for the task. The presumption implied in this undertaking is exceeded only by the assumption that man can carry on civilization without philosophy.

7. The hazard of doubt frequently confronts the philosopher.—Philosophy as an attitude of unbiased inquiry and persistent search for the truth will work havoc with beliefs and conceptions which rest merely on tradition or any other insecure evidence. A study of this kind is likely to bring disturbing doubts into the realm of morals and religion, especially if one's beliefs here are narrow or provincial. Lord Bacon once wrote, "It is true that a little philosophy inclineth man's mind to atheism, but depth in philosophy bringeth man's mind about to religion. For while the mind of man looketh upon second causes scattered, it may sometimes rest in them and go no farther; but when it beholdeth the chain of them, confederate and linked together, it must needs fly to Providence and Deity."[13] Lord Bacon's statement has been verified in the experience of a great many students of philosophy. But is it not much better to have our weak and trembling beliefs which rest merely on custom and tradition examined and criticized, even though it is painful and annoying? Beliefs which stand in constant dread of being destroyed by the advancing knowledge of science give little comfort anyway. And, what is worse, they may be found upon examination to be superstition and relics of a more primitive state of human culture. Moreover, they may be actually false and harmful in practice. St. Paul's injunction is not only biblical, but it is good philosophy: "Prove (test) all things; hold fast that which is good."

It is frequently assumed that an "age of faith" is necessarily an age of morality and that an "age of doubt" is certain to be a period of immorality. In the fine words of W. G. Everett: "It all depends upon the kind of faith and doubt in question. One should surely be cautious about measuring moral convictions by dogmatic faith, or moral enthusiasm by religious emotion. Examples are never wanting of those who 'believe and tremble,' and yet play the devil's part in the business of life."[14]

There is an ethical aspect of belief which no student of philosophy can afford to overlook. Space will be taken here only to suggest the problem. Belief, of course, takes care of itself. The child is prone to believe. Only the informed and thoughtful person can doubt. Doubt to the reflective mind is a necessary step in the advancement of knowledge. One who has not learned to doubt has not learned to think. Let it be observed, however, that all doubting is not thinking. It may be the lazy mind's substitute for vigorous pursuit of a problem; it may be the device of a propagandist who wishes to advance a cause against a competing cause; it may be the unconscious reasoning of a mind beclouded with prejudice. The only kind or doubt which is philosophically defensible is systematic and disinterested. From this point of view, doubt is not an end but a means, an indispensable intermediate step in the movement of thought from a lower, inferior, and narrow station to a higher, superior and more comprehensive station of truth. Professor W. K. Clifford once wrote: "It is wrong always, everywhere, and for anyone, to believe anything upon insufficient evidence."[15] This statement which the philosophically minded feels impelled to approve may still need the supplementation of the truth in William James's essay, "The Will to Believe." The thought may be paraphrased thus: if the evidence in favor of any view seems reasonable and probable, though it is admittedly incomplete but all that is obtainable; and, if one knows that the acceptance of this probably true view will enable him to be a better man and will make him of larger service to others, is it not one's duty to believe?

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[13] "Essays," XVI, "Of Atheism." (E. P. Dutton and Co.)

[14] "Moral Values," p. 396. (Henry Holt and Co., 1918.)

No one can guarantee any particular result from the study of philosophy. Knowledge gained from the study of government, medicine, and literature may result in harm to the individual and society. Education and training in any subject involves a hazard,—the risk of its being used destructively rather than constructively. The same is true of philosophy. Training in the philosophical attitude and method may equip a man the more skilfully to make the worse cause appear the better. It may show him how to be a superficial, though chronic skeptic. It may generate in him the mind of a cynic,—that selfish, egotistical pride which causes its possessor to behave like a self-sufficient monarch in a world of slaves. These are possibilities. On the other hand, the probability is that the honest and persistent study of philosophy will cultivate critical habits of thought on all questions, together with an attitude of tolerance for those who hold opposing views. Open-mindedness and a sympathetic appreciation of worth, wherever it may be found, may be had without descending to sentimentality or intellectual spinelessness. Urged on by a consuming passion to know and understand, the philosopher combines logical acumen with caution in believing that he knows. Hence much of what he accepts will be regarded as tentative or provisional and subject to change with new light. It does not follow, of course, that the philosopher must be without moral or intellectual convictions.

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[15] "The Ethics of Belief," in "Representative Essays," p. 54.

To any who approach the study of philosophy with fear of doubt and skepticism, we would say with John Greenleaf Whittier:

> A bending staff I would not break,
> A feeble faith I would not shake,
> Nor even rashly pluck away
> The error which some truth would stay,
> Whose loss might leave the soul without
> A shield against the shafts of doubt.
>
> And yet, at times, when over all
> A darker mystery seems to fall,
> (May God forgive the child of dust,
> Who seeks to *know*, where Faith should *trust!*)
> I raise the questions, old and dark, . . .[16]

Again, the philosophical attitude is well expressed in the quatrain:

> Nor will I let the teachings of another
>   Absolve me from the task of finding out;
> Just as I will not force upon my brother
>   The answer I have made to mine own doubt.

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[16] "Questions of Life."

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CHAPTER III

THE BACKGROUND OF MODERN PHILOSOPHY

THE AIM of this chapter is to portray in a brief and summary way the reactions of human beings to the world on typical levels of experience. We have selected for description and explanation five representative planes of human experience, a study of which will prepare the way to an understanding of the spirit and method of modern philosophy. Modern philosophy has developed in the closest association with the sciences. Philosophy to-day reflects the characteristics of a scientific age. As an aid to the proper appreciation of present-day attitudes to philosophical problems, let us consider a few prescientific types of thought. We shall consider the following:

I. Primitive Man and His World.
II. The Child and Its World.
III. The Plain Man and His World.
IV. The Medieval Man and His World.
V. The Scientific Man and His World.

It will be evident as we proceed that each person referred to above represents a type. Accordingly we have what may be called the primitive mind, the child mind, the medieval mind, and so on. Each stands for an attitude, spirit, and method of dealing with the facts and problems of life. Each type of mind may further be regarded as representing a plane or level of human experience which has thickness as well as breadth; that is, a type stands for a group or class of persons whose primitiveness, childishness, or medievalness varies greatly and in the end merges imperceptibly into another type. It is not to be understood, however, that the order here indicated necessarily corresponds throughout to the chronological stages of human development. Obviously there is some correspondence; yet observation will show that any type herein mentioned may be contemporary with any other and that all may exist simultaneously. A cross section of mankind at any period of history, especially the later, will show at least some persons representative of each type.

The mind of man is a curious thing. Born of matter and life, it is filled and shaped by the ideas, influences, and forces of the world in which it grows and matures. So potent are the influences of the environment that scholars write about ''The Mind in the Making'' (Robinson), ''The Making of the Christian Mind'' (Atkins), ''The Making of the Modern Mind'' (Randall), ''The Making of the Western Mind'' (Stawell and Marvin), and ''The Medieval Mind'' (Osborn)—all of which suggest that attitudes, sentiments, and beliefs are in great degree plastic, and that what ideas prevail depends upon the extent to which physical and social conditions permit traditional views to persist. Science, invention, education, and travel contribute much to the increase and spread of knowledge. Man's history, both individual and collective, is continuous, and change is almost certain, though usually gradual and sometimes imperceptible. Nevertheless, in the midst of continuity and change, the careful observer may detect general methods of organizing experience, types of belief, and levels of conduct. If one wishes to understand the mind of the present generation and to comprehend the body of beliefs and practices which constitute its operative philosophy of life, it is almost necessary to review the history of these beliefs and modes of conduct in all stages of human civilization back to prehistoric time. Space cannot here be given to such an historical statement, and we offer as a substitute a descriptive account of five levels of human experience.

Before entering upon our study of the five types of mind, let us ask: Of what philosophical value is an examination of the types of mind or levels of experience represented in human history? Such a study should make more apparent what kind of creature man is. It should also prepare the way for a clearer understanding of the fact that man's conception of the world, man's estimate of himself and his place in the world, are things of continuous growth. Furthermore, such a study will show that on all levels of experience man sees things in relationship, that he is always explaining and interpreting, and that explanation on all levels consists in placing things in their proper class. In a word, man is always relating the new and unknown to the old and known. Again, it will become clear that man persistently refuses to be satisfied with the objects of sense alone. By an impulse native to his being and by bitter experience with the external world, he is driven to look beyond the sensible world of material things—the things of color, sound, touch, and taste—to something which, with the aid of the imagination and reason, he believes to be more real and abiding.[1] In a similar way man looks beyond the outer sensible form of himself and his fellows to a reality which becomes an object of consideration and thought. When man thus semi-consciously and consciously begins to observe and interpret to himself the world of facts and value, philosophy, in principle, has begun.

I. Primitive Man and His World

By primitive man is meant those races and peoples who have little or no contact with, or experience of, critical or scientific modes of thought. Among such peoples would be classed the ancestors of the ancient Greeks and Romans, the remote ancestors of the nations of north Europe, also peoples who to-day inhabit isolated quarters of India,

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[1] See James G. Frazer, "The Golden Bough," Vol. I, Chs. I–III (The Macmillan Co., 1915); and John Fiske, "Myth and Myth-Makers."

China, Africa, South America, Australia, and certain islands of the sea. Mankind emerges gradually from the lower levels of savagery and barbarism through semi-civilization to the higher forms of civilization. The plane of civilization, like other levels of culture, is found to have gradations, and there is not complete agreement as to where certain peoples are to be classed.

The discoveries of biology, paleontology, anthropology, and archeology lead us to believe that man has been upon this planet for at least five hundred thousand years. In all these millenniums we may suppose man has not changed greatly in his inherited traits, though in such physical features as size, shape, and color, he has undergone modifications. His evolution has been social and cultural chiefly. The writing of history with critical accuracy can scarcely be said to have begun prior to the sixth century B.C. Prehistoric man is known to us, so far as he is known, through the discoveries and studies of archeologists, ethnologists, and anthropologists. Such source materials as monuments (ruins, tombs, weapons, pottery, implements, ornaments and the like), inscriptions (including drawings, pictures, and writings upon tablets, walls, caves, and monuments), and traditions convey some knowledge of beliefs and practices among prehistoric peoples. Of these sources tradition is most easily perverted and on this account is least trustworthy. It remains true, however, that observations made upon man now living on the lowest level of primitive culture reveal modes of living, beliefs, and practices which were probably characteristic of prehistoric man. It is possible that prehistoric man regarded himself, his fellow men, and nature much after the manner of the crudest of contemporary primitive peoples.

There is at present a considerable body of literature on primitive thought, belief, and practice. The missionary, traveler and explorer have supplemented the studies of anthropologists and ethnologists in securing information about a type of human society now become rare because of the searching curiosity and "peaceful penetration" of civilized man. It will be sufficient for our purpose if we study primitive man on the following points: A. The mind of primitive man; B. Mana and animism; C. The soul and death; D. Totemism; E. Taboo; F. Magic; G. Mythology; and H. Illustrations of primitive practice.

A. The Mind of Primitive Man

That there are important resemblances between the mind of man and the mind of the animal, observation and experimentation by psychologists have placed beyond doubt. Nevertheless, it is now generally believed that the mind of man is superior in at least three respects, namely: (*a*) in the capacity to reason, think abstractly, and solve problems; (*b*) the ability to originate and employ an organized articulate language; and (*c*) the power to invent and use instruments or utensils of varied application. Recent studies on animal behavior show that animals make perceptual inferences and that approximations to conceptual inferences may be found in the higher animals. It is also known that animals communicate by means of signs and that they sometimes employ simple instruments to realize ends. But these powers in the animal seem to be very limited, whereas in man capacity for thought, language, and tools appears to be almost unlimited. The chief evidence for this generalization, of course, lies in man's social and cultural evolution. It is not to be inferred, however, that all human thinking is exactly of the same type, or that all human beings, without respect to age and stage of cultural development, exhibit any or all of the unique capacities of man in the same degree of refinement and cultivation.

One may grant that the inherited mental capacity, together with the laws of thought and action, in primitive man do not differ essentially from those in civilized man, and yet recognize that the mind of primitive man differs in many respects from that of the civilized, reflective man. The differences consist principally in the fact that primitive man is bound by crude and ineffective traditional modes of thought and action, while the modern man has at his disposal an elaborate equipment of intellectual and physical tools. The widest contrast will appear, of course, if we compare the primitive mind with the modern scientific mind. A moment's reflection upon the differences in the manner of thought and action existing at present among peoples living in different social strata—to say nothing of the difference between the Russian and American, the Chinese and the English, the Italian and Japanese—will suggest something of how different must be the primitive man's thinking about himself, society, and nature from that of the modern scientific man. These differences are to be accounted for but slightly on the basis of hereditary traits or innate racial capacity. For the most part they are to be explained by the influences of the physical and social environment, especially the latter, in the form of custom, tradition, education, intellectual and physical tools.

Primitive man's lowliness in the scale of cultural evolution is not to be confused with moral degradation. The restraint of custom, tradition, and tribal law in the primitive group is often more severe and exacting than the devices for social control in civilized society. It is therefore no more true that primitiveness implies moral degradation than that a moderately educated society to-day is less moral than a highly scientific community. Not infrequently have primitive peoples been debased by contacts with so-called advanced civilization. No doubt there are stupid, lazy, and brutal men among savages; but they are also to be found in civilized society. Again, what constitutes stupidity, laziness, and brutality will differ with the stage of civilization and the prevailing standards of measurement. Naturally, of course, we should expect that the higher the stage of social and cultural evolution, the higher would be the standards for estimating social and ethical values.

In his book, "How Natives Think,"[2] Professor Lévy-Bruhl describes the primitive mind as prelogical. By this is meant that the primitive is little given to analysis or critical reflection and has little appreciation of the contradictory. His discriminations are of a different type. On this account the study of primitive mentality almost requires a new and different terminology from our own. There is but a small amount of individual thinking. On the contrary the primitive man is under the sway and spell of the group mind. Tradition, customary beliefs, and practices are handed down from one generation to another through folklore tinged with emotion and the sacredness of religion. These are made a permanent possession of each new generation by means of group recital, initiation exercises, and pantomime. The initiation exercises through which the youth are expected to pass upon reaching puberty strengthen the grip of the past upon the rising generation. Professor Lévy-Bruhl further holds that while the primitive mind employs concepts just as the civilized man does, these concepts are "collective representations" and carry a mystic meaning. The primitive mind gets its most impressive experiences under circumstances which not only arouse sensibilities, but also emotions and motor activities. Thus objects appear to him, not as individual things, but as wholes or totalities shrouded with mystery and invested with unseen forces. It is in the light of this "collective representation" and the unseen forces that are believed to reside in the totalities of his experience that we are to understand the mystic properties attributed to animals, plants, inanimate objects of nature, manufactured articles, images and portraits, names, shadows, and dreams. This view becomes more plausible when we remember that in primitive conditions of social life the individual has not emancipated himself from the group. He owns no property and performs all his activities—work, play, hunting, fishing, and religious observances—as a member of a group. His will, purpose, and conscience are not individualized.

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[2] Ch. III. *Cf.* also Franz Boas, "The Mind of Primitive Man," Ch. VIII.

Professor Lévy-Bruhl uses the term "law of participation" to explain all of the mental functions of primitive man. This law, he holds, is at the basis of all combinations of ideas. "Law of participation" is a descriptive phrase intended to explain the fact that in the collective ideas of the primitive mind, objects, living things, or phenomena may be at the same time themselves and something else. When it is observed that primitive man belongs to a society of a totemistic type, where every animal, plant and object is a part of a totem, this mystical interpenetration of things appears more understandable. The primitive mind is essentially synthetic, and not analytic. In this sense also it is prelogical.

Professor H. H. Bawden asserts that the primitive mind is: (1) *Naïve.* Distinctions which to our mature and articulated thought are clear, to the primitive man are vague, incoherent, and confused. He takes things at their face value; he has no rich and variegated background of social experience to give meaning to the objects of his world. Things are what they seem to a mind which differentiates little.

(2) *Practical.* Primitive man is engaged in the proximate problems of simple home or group life, with the urges of food and sex pressing upon him. Custom and tradition bind him in all that he does. He thinks only in the face of imminent need. The tribal tales which relate the past and grip his imagination constitute his explanations of awe-inspiring phenomena. (3) *Integral.* His experience or knowledge is organized into blocks or areas under the pressure of group ideals. The individual is not aware, of course, of these bonds. (4) *Implicit.* The germs of most, if not all, of what appears as inner and outer are in his experience but in implicit form. He is superstitious,

because in his religion he is emotional and preparational. His labor is narrow and servile, because he has not learned the meaning of his activities. His mind is bovine and peaceful, because he is too little conscious of the ideal to be discontented.[3]

In opposition to Lévy-Bruhl's theory of the prelogical character of the primitive mind, we have the view of James G. Frazer and Paul Radin, which holds that savages in general have theories of the world and conceptions of life which to them are rational and intelligible. Mr. Frazer remarks: "It is, in my opinion, a profound mistake hastily to conclude that because the behavior of the savage does not agree with our notions of what is reasonable, natural and proper, it must necessarily be illogical, the result of blind impulse rather than of deliberate thought and calculation."[4] Mr. Radin argues to similar effect and insists that there are thinkers among primitive peoples who reflect upon experience and the world around them and who interpret life in philosophical terms. Some of these reflections and theories appear embodied in rites and ceremonies, if not in literature.[5] They grant that the savage, like the civilized man, often acts on impulse and sometimes allows his passions to overmaster his reason. They would concede that primitive man is more impulsive and emotional than the reflective or scientific man and that his thought is apt to be vague and inconsistent, even fluid and unstable under alien influence; yet, they contend that beneath his beliefs and practices there is a groundwork of logic and reason resembling our own, though differing from ours in the premises from which it starts. In consequence it is not impossible to find among primitive peoples a degree of intelligence, industry, courage, and affection which should put the civilized man to shame.

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[3] "The Principles of Pragmatism," pp. 65–70. (Houghton Mifflin Co.)

[4] "Man, God and Immortality," 1927, p. 37. (By permission of The Macmillan Company, publishers.)

[5] See Paul Radin, "Primitive Man as a Philosopher." (D. Appleton and Co., 1927.)

These two views of the primitive mind are almost contradictory and hence difficult of reconciliation. It is possible that a partial harmony can be made if we regard Lévy-Bruhl's account as psychological primarily, and take that of Mr. Frazer and Mr. Radin as purely descriptive and historical. Moreover, it is possible that the truth about the primitive mind is not yet clearly known (this should not appear strange, since we do not yet fully understand the mind of the child or the modern adult) and that what we have in these two schools of anthropological thought is both partially true and partially false. Further observation and study may show that there are elements of truth in both positions which will need to be merged into a larger and truer view. Whatever the outcome of this controversy may be, we may safely conclude that, because of the influence of custom and tradition and because of the meager intellectual and physical tools available to the savage, the primitive mind represents a type more or less distinct.

Nothing so strikingly brings into evidence the difference between primitive mentality and that of modern scientific thought' as to see how primitive man employs causality and classification. It will be observed at once that no two ideas are more important to modern logic and science than the two concepts named. We are always asking "Why?" and "What caused that?" Furthermore, we are always grouping objects on the basis of resemblance. In respect to causality it must be said that the idea is extremely vague to primitive man, if it is present at all. The reason for this is that most of his ideas are "collective representations" in which analysis plays a negligible rôle. For the most part he reasons *post hoc ergo propter hoc* (after this, therefore on account of this). Such fallacious reasoning is not confined to primitive levels of culture. The black cat crossing our path, thirteen sitting down to dinner, and so on, still hold their meanings for some people in civilized communities. Primitive man tends to confuse temporal sequence with causal sequence. He explains disease by the mystic influence or power[6] which proceeds from the gods, devils, or from living beings. Accordingly disease is treated by the medicine man or exorcist by the methods of magic; the evil spirit must in some way be driven out.

Primitive peoples possess language, but its structure is different from that of a culturally developed people. The primitive type of language has general ideas, but they are not marked off by clear-cut meanings. Rather do they "welter in an atmosphere of mystic possibilities," as Lévy-Bruhl says. "Logical thought finds itself dealing with a scale of general concepts varying in degree, which it can analyze or synthesize at will. Prelogical thought busies itself with collective representations so interwoven as to give the impression of a community in which members would continually act and react upon each other by virtue of their mystic qualities, participating in, or excluding, each other."[7]

The classifications made by primitive man also suffer from the lack of critical analysis. Thus objects or events with little or no resemblance are placed in the same class. This fallacy is usually called classification by superficial resemblance, an error not easy to avoid and not uncommon among civilized peoples to-day. This error, together with the tendency to neglect negative instances, is common among primitive peoples. The outstanding example of primitive man's error in classification is his tendency to attribute life to such objects as sticks, stones, clouds, winds, and mountains. Identity of nature is ascribed to objects which look alike in rough outline or act alike. Primitive man's tendency to neglect negative instances is illustrated in his practice of regarding dreams as prophetic and mysterious flights of birds as forewarning of success or failure in a contemplated venture, for example, hunting, fishing, or war. When it is recalled that primitive knowledge is undifferentiated into what we call sciences, religion, and morals, and that what the primitive man knows and feels is one whole or totality of experience, it will not seem strange that he should ignore or be unable to appreciate our more critical use of such terms as cause, effect, and class. The traits of the primitive mind are most clearly revealed in the beliefs and practices of primitive society, and to these we now turn.

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[6] See Lévy-Bruhl, "How Natives Think" (1926), Ch. VII.

[7] *Ibid.*, pp. 126–127. (Reprinted by permission of and special arrangement with Alfred A. Knopf, Inc., authorized publishers.)

B. MANA AND ANIMISM

The term *mana,* though it originated in the Pacific region, is now generally applied to the mysterious or supernatural power, impersonal in character, which primitive man believes inhabits all natural objects about him. This power may manifest itself as a physical force in a natural or manufactured object, or in an exhibition of excellency in a human being. If a man has been successful in war, it is not due to his natural strength or skill, but he has the *mana* of a spirit, perhaps of some deceased warrior, which is conveyed through an amulet or stone hung from his neck, or from a tuft of grass at his belt, or a tooth hung from his finger. If his fruit trees bear bountifully, or his flocks multiply, or disease is warded off, or he is successful in pursuit of game, or his boat moves swiftly, or his arrow goes straight to its mark, it is brought about by no natural cause, but by the unseen presence of a supernatural power in some object. Primitive man's religion consists mainly in getting *mana* for himself or using *mana* for his welfare. To this end prayers and sacrifices are offered. In the Solomon Islands, for example, the chief objects of worship are the ghosts of deceased men who had much *mana. Mana* is thus the lineal ancestor of the civilized man's God. Other names for the same force or power are: *Orenda,* for the Iroquois; *Wakan,* for the

Sioux; *Manitu,* for the Algonquin; and *Oudah,* for the pygmies in Africa.

Quite closely related to the belief in mana, if not inseparable from it, is primitive man's animism or animatism. *Animism* is the term applied to the belief that all nature is possessed of a soul or life which gets individualized or attached to particular bodies. When this "spiritual presence" inhabits a body, it is called a soul; and when it exists unattached to a body, it is regarded as a spirit or ghost. The English school of anthropologists explains animism as the result of primitive man's elementary, rational effort to explain the facts of nature. It is assumed by this school that when man began to inquire into the cause of change, within his own being and outside, he hit upon the only source of activity which he knew directly, namely, an act of will. That is, he knew himself to be animated by a soul, and he inferred that when an object of nature—a heavenly body, a cloud, a stream, a bird, or animal—moved or made a sound, it also must be actuated by a soul. Primitive man's experience with dreams, intoxication, memory images, epilepsy, feeble-mindedness and insanity, fainting, hypnotism, and death probably occasioned the thought that there is in man a double or soul. The doctrines of heaven and hell and of transmigration of souls readily develop upon this belief in animism. The particular form which these latter beliefs take is invariably determined by the circumstances and conditions of the environment. It is entirely probable, as Lévy-Bruhl, Koffka, and others hold, that animism as the English school of anthropologists define it does not exist at all except among peoples somewhat advanced in reflective experience.

C. The Soul and Death

As already indicated, to the primitive man no object in nature is favored above another in the matter of soul possession. Everything has its own power or kind of activity, and, therefore, its own soul. It is this function or power which objects possess that differentiates one thing from another and is the basis of naming. Yet there is a position of privilege for human souls. They are more precious to their possessors and are the measure of the qualities of other souls. There is little doubt that primitive man's belief in soul represents a considerably advanced stage of primitive life, because it implies a reflective level of experience.

Primitive thought tends to identify the soul with the life of the body. Often, as among some tribes of South America, Africa, and Australia, there is inability to think of the soul as separated from the body. Cannibalism, which has been found in all three of these continents, may be due in part to the belief that in eating of the body the strength of the victim is acquired. The ancient Hebrews believed that the soul has its residence in the blood; the ancient Egyptians and our American Indians placed its seat in the heart; other peoples placed it in the breath, or somewhere else. In nature the soul is likened to a flame, a vapor, a phantom, or a shadow. The soul is believed to vary in size all the way from the dimensions of the image of the body in the eye to the actual size of the body. It may be white, black, or red in color. It may exist in multiple forms in the body. It is separable from the body and may leave it in sleep, in dreams, and in death. The soul may be good or bad.[8]

Since the soul is believed to be a thin and airy kind of stuff, not necessarily visible, it may escape from the natural openings of the body without being noticed. These openings, therefore, are sometimes sealed or closed with rings or snaps. Souls that escape at night may meet other souls and get into trouble; they may even be captured in a bottle by the medicine man and returned to the owner. With such a conception of the soul, it is easy to understand why the medicine man and the sorcerer should have such great power among primitive peoples, and why such beliefs as witchcraft, divination, and transmigration are possible.

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[8] Frazer, ''The Golden Bough,'' Vol. I, pp. 247 ff.

D. Totemism

Totemism as a belief has existed in some form among the early peoples on every continent. In North America and Australia, where it has been found in fullest development, it has the following characteristics: (1) It exists among people who are composed of clans united by a real or fictitious kinship. (2) The clan is known by the name of some plant or animal, or, in rare instances, by some natural object or phenomenon, as, for example, rain, or sun. (3) The object which gives the clan its name is believed to be related to the clan and each of its members in some mystic way, often genetically, and the animal or plant is regarded as belonging to the clan. (4) The special plant, animal, or other object, as the case may be, is the object of religious emotion and worship, is a subject of taboo, and is not killed or eaten except for ceremonial purposes. (5) The members of the same totem are entitled to mutual defense, protection and resentment of injuries, and may not intermarry.

Anthropologists are not agreed in their explanation of the origin of totemism. Spencer, Gillen, and Frazer hold that it originated in the primitive explanation of conception and childbirth. Andrew Lang, Herbert Spencer, and J. Pikler, believed it had its origin in names. A. C. Hadden proposed that it arose through the association of a clan with the plant or animal of their environment which at some remote time may have preserved the life of the tribe. Emile Durkheim held that totemism is a religious institution. Primitive man feels that certain animals or plants radiate a mysterious impersonal force, which in time comes to be revered as a god. The Swedish scholar, E. Rauterskiold, a contemporary of Durkheim, argued that totemism is connected with an impersonal conception of life. Primitive man finds himself associated with certain plants and animals. Nothing to him is personal or individual. Moreover, he does not recognize himself as lord of creation. Thus he feels himself as a part of a community or whole, and comes to associate his own welfare with certain animals or plants.[9]

E. Taboo

The word *taboo* (tabu) literally means "set off," and signifies that the object or person in question is not to be touched or used. Almost any object may be taboo, for example, the person of the king, a dead body, certain plants or animals, strangers, mourners, warriors on a campaign, women after childbirth, girls at puberty, and names. The motives for taboo may be: the attempt to avoid contagion; to enhance prestige; to preserve the food supply; to guard against violating the will of the gods or of man. The violation of a taboo to primitive man is especially dangerous because the whole group may become infected or suffer some ill because of the violation by an individual. Taboo is closely associated with belief in mana and animism. These taboos, as Frazer says, serve as "electrical insulators to preserve the spiritual force with which these persons (and objects) are charged from suffering or inflicting harm by contact with the outer world."[10]

F. Magic

Magic is difficult to define because it is a belief which arose and was practiced in a prelogical age. Yet it is quite central to primitive man's philosophy of nature, to his religion and practical life. To understand magic one must remember that primitive man believes in mana, in animism in some form with its belief in souls, spirits and ghosts or disembodied human spirits. With such a background of belief, magic consists in the devices and procedures (gestures, recitations of mystic words or formulas) by means of which the mysterious forces inhabiting nature and man may be controlled for the welfare of the individual or the group. The worker of magic, in most instances, is the *shaman* or medicine man.

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[9] See "Encyclopædia of Religion and Ethics," article "Totemism"; also Frazer's "The Golden Bough."

[10] "The Golden Bough," Vol. I, p. 343. See also pp. 321–353.

The forms which magic[11] takes among any people are of course mostly a matter of social inheritance. Little, if any, reflection or reasoning is involved. Yet upon examination most types of magic fall into one of two classes: (1) imitative or homeopathic; and (2) sympathetic or contagious. The first kind involves the principle that like produces like or that an effect resembles its cause. The second kind is based on the principle that things once in contact, though no longer so, continued to act as if that contact persisted. Thus, in harmony with the first principle, primitive man believes he can produce any desired effect by imitation. In keeping with the second principle, he believes that he can influence at pleasure any person or object for good or ill provided only he can get into his possession a part or particle of that person or object. Thus by sympathetic magic, if the savage medicine man can get possession of a lock of hair from his enemy, a bit of clothing, a tooth, some nail-pairings, or even an image or crude picture, he may pronounce a curse upon it, or burn it, and calamity will fall upon his enemy. By the same means good may be effected for friends. If a man cuts himself with a knife or weapon, he may oil the knife or weapon, keeping it bright, and thus prevent the wound from festering. Diseases and other evils may be magically transferred from man to animals. Where totemism exists, the totemic animal is sometimes eaten in a sacred meal or sacramental feast, under the belief that a mysterious or divine strength is derived therefrom. Cannibalism is practiced with the same belief; namely, that the special skill, wisdom, or power of the victim becomes the possession of the eater.

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[11] See ''The Golden Bough,'' Vol. I, pp. 9–128; also, in ''Encyclopædia of Religion and Ethics,'' article ''Magic.''

As instances of imitative magic the following may be cited: Wishing to produce rain, the wizard takes a branch and, having dipped it into water, shakes the branch and thus sprinkles the ground. Wishing the sunshine to appear, he climbs to the roof of the house, spreads his arms, and blows with all his might, beckoning the clouds to pass by. He may shoot fire-tipped arrows into the air to rekindle the setting sun. By similar imitative devices the wind is aroused or tied up, trees are made fruitful, and success is made more probable in such activities as war, hunting, and fishing. Both kinds of magic imply the mana belief and are means of tapping this mysterious force for the welfare of the group and for the purpose of bringing harm to the enemy.

Before closing this treatment of magic, it may be well to point out that two important techniques of our modern civilization, namely, science and religion, have their roots, historically, in magic. Modern medicine certainly had its prescientific origin in the crude practices of the medicine man. The medicine man, shaman, or wizard was a ''master mind,'' controlling through his magical devices not only disease but all the objects of nature—winds, waters, heavenly bodies, plants, animals, and men—in which mana dwelt. His art was the first, though crude, attempt to apply the principle of causality to nature and to control nature thereby. The whole history of science is an attempt to separate the true knowledge of nature from the false. Religion too, in its earliest manifestations, is practically inseparable from magic. Frazer thinks religion has its origin in magic, though this view is not generally accepted. Perhaps it is more true to say that primitive man's experience and knowledge is undifferentiated. Thus magic, religion, science, and morals were one at the beginning and only later came to be separated and labeled.

Religion has always taught that by proper means superhuman agencies may be controlled for human good or ill. Religion to-day has its priesthood, its sacraments, its sacred places, its sacred objects, its rites and ceremonies. It would be false reasoning, of course, to say that because religion has a modest origin in magic, it is a vestige or hangover of savagery and the prelogical age of man. The same course of reasoning would indict the whole structure of knowledge in every one of the sciences, for all have a similar origin. Origin may be highly significant for certain purposes, but from another and equally important point of view, origin amounts to little. When it is remembered that the black art, black magic, the evil eye, werewolves, swan maidens, and witchcraft of the Middle Ages in Europe are so close to us in time, and when it is remembered that we still have with us fortune tellers and powwowers, may we not ask whether either in science or religion magic has been left behind?

G. Mythology

In the mythology of primitive people we have another opportunity to study the operation of the prelogical mind. The term *myth* is applied to that great variety of stories invented by the fancy and imagination of primitive peoples to answer the *how* and *why* of things. Practically all peoples in a primitive stage of culture, provided they possess an extended past, have a more or less elaborate mythology. There are, for example, cosmogonic myths, stories to explain the origin of the world; anthropogenic myths, stories to explain the origin of man; culture myths, to explain the origin of arts and crafts; star myths and solar and lunar myths, to explain the origin of the heavenly bodies; myths to explain the origin of disease, death, heaven, and hell; nature myths, to explain the origin of such natural phenomena as the seasons, earthquakes, floods, fire, snow, and animal species.

The mythology of a people, like its folklore and its language, is not the conscious work of an individual. There is no inventor of language, and there is no single inventor of the views held by a people concerning the origin of things in nature. Myths are the cumulative product of the poetic fancy of several generations, expressed in picture language, often in poetry, and handed down from age to age with accretions and diminutions. Myths represent not only an imaginative and poetic explanation of the little-understood and mysterious matters of nature; they embody the reactions of man's feelings and emotions, particularly the moral and religious feelings and sentiments. Myths may therefore be regarded as the philosophy of a people yet in the childhood of culture. The individual is not yet emancipated from the group in either thought or action. There is little or no critical examination of the strange and unknown. The feelings and emotions organized about traditions and customs predominate over the critical activities of the mind. In the literature of the ancient Chinese, Hebrews, Persians, Babylonians, Greeks, and Romans, we have the most interesting and instructive myths.[12]

H. Illustrations of Primitive Practices

The following passages, taken from selected articles in the New York *Times,* show that primitive views and methods are still in vogue among people now living in different parts of the world.

1. Among the Tibetans.—

Whenever a Tibetan falls sick, he or one of his relatives immediately consults a lama in order to find out which particular devil is responsible for the trouble. The priest does this in one of several ways. He feels one of the pulses of the body, or he casts a horoscope, or he throws himself into a trance in which he receives information from the gods on the matter. The older sects examine the entrails of slain fowls and other small animals.

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[12] See "Encyclopædia of Religion and Ethics," articles on "Cosmogony," "Cosmology," "Mana," and "Myth"; "Encyclopædia Britannica," articles on "Mythology," "Animism," and "Magic."

Once the particular demon has been fixed, the priest informs the patient of the various services that must be performed in order to cast out the devil. These vary in length and importance according to the wealth of the sick person. Once the requisite ceremonies have been announced it would be fatal not to perform them, for should the patient be guilty of such failure the demons of sickness would attack him with renewed force.

The usual way in which a service of exorcism is performed is for several lamas to gather in the sick-room and there intone the prayers specified. Praying is accompanied by loud beating of drums, clashing of cymbals, clapping of hands. At intervals the devil is exhorted in a loud voice to be gone, and only when the presiding lama gives his word that the demon responsible has left the sufferer is the dreadful noise stopped.

Of course, under such treatment, quite as many sick people die as recover. This is ascribed to the effect of misdeeds in the present life or in a former existence. During the ceremony the sufferer is not permitted to sleep, since during slumber more devils enter into his body.

On payment of a fee one can engage a priest to cause a devil to enter into the body of an enemy, who, then, of course, has in his turn to employ lamas to counteract the evil influence. As the latter are the only ones who can inform the people that demons have entered into them, they reap a rich harvest from their flocks.[13]

2. Among the American Indians.—The Cherokee Indians of the Carolina Mountains, descendants of the once powerful Cherokee Nation, take no account of modern advances in medicine, according to the report of Dr. F. M. Olbrechts, ethnologist who recently returned from an expedition to the Indian reservation in North Carolina. The study was made by Dr. Olbrechts for the Bureau of American Ethnology of the Smithsonian Institution. He reports that, like their ancestors, these Indians are more concerned about how medicine is given than what it is.

If a man has worms, for instance, the medicine given to get rid of them must have flint arrowheads put into it to impart to it the cutting quality of the stone so that the worms may be cut to pieces.

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[13] "Exorcism of Demons in Tibet Is Profitable for the Lamas," the New York *Times*, September 11, 1927.

Certain remedies are only effective if administered in a gourd dipper. Also, the incantations accompanying the gathering of the plants from which the drugs are made and accompanying their administration must be letter perfect, or no good will come.

Dr. Olbrechts brought back to the Smithsonian for exhibition in the National Museum various articles illustrating the primitive and superstitious nature of Cherokee medicine. These include a blow tube used by the women and medicine men to sprinkle or blow decoctions and infusions upon affected parts of the body; a piece of uncut flint for treating rheumatism and like ailments; a magical transparent stone alleged to possess mysterious powers in the elimination of disease; and a medicine man's varicolored cloth, which is designated by words meaning ''take it away.'' In this cloth the doctor wraps up and carries away the cause of the disease, which is always a spirit or supernaturally injected object, after its removal.[14]

3. Among the primitive Indians of Brazil.—Mr. L. L. Letgers, a missionary and explorer in the region of the headwaters of the Xingu River, Brazil, reports the following concerning the medicine men of the Indians in that region:

> Much of the community life centres in their religious ceremonies. These are concerned largely in propitiating or exorcising evil spirits. The spirits are propitiated before entering upon the hunt or fishing. In some cases the entire night is taken up in prayer and dancing.
>
> Each tribe has its religious leader. In a few cases it is the chief. Usually it is the ''witch doctor'' or ''medicine man,'' one who deals with mystery matters. These leaders are always most jealous of their rights and powers. They are the leaders in the songs and in the ceremonies for propitiating or exorcising the evil spirits. In case of sickness they try to remove the trouble by driving away the evil spirit, or by extracting the material things which the evil spirit has caused to enter the body of the sick one. In case of death, the medicine man is the leader in the singing and dancing to drive away the spirit of the dead.
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> The life and customs of the people are largely influenced by the spirits of the dead. Some tribes bury their dead in a shallow grave directly beneath where the hammock was hung in the house, that

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[14] The New York *Times,* August 10, 1927.

the spirit of the departed may be content and do the living no harm. In other tribes two or more days are taken in dancing and prayer to drive away the spirit. They are commanded by the witch doctor to depart, to go into the forest and enter the body of some animal, or to go far away and wander among the stars. In these ceremonies the witch doctor is the leader, and his word is final when he says, "Now they are gone."

In most places they have a house given over entirely to religious ceremonies, where the rattles, flutes, drums, and all the other equipment for the dance are guarded. Usually women are not allowed to enter one of these houses, nor are they allowed to see any of the flutes or rattles, it being held that the sight of them would cause the death of the women. In one place, we succeeded in trading for some of the masks, flutes, rattles, etc. Before we could leave the house with them, all the women were driven into one of the huts; then after hiding the things under my coat, I was permitted to carry them away, but I was warned not to let the women see them.

Most of the witch doctors are well acquainted with all poison plants which abound in the country, and are always ready to use the poison upon any one who has displeased them. Among a few tribes women are witch doctors, but generally this office is held by men.[15]

II. The Child and Its World

It is our purpose in this section to point out only the most general characteristics of the mind of the child and of its conception of the world. Studies on the child mind have appeared in great numbers in recent years and some of them are based upon careful observation and testing. Without exception these critical investigations show that the child's knowledge of itself and of the world exhibits levels of growth and dependence upon the influence of the social environment. Beginning with single objects, or complexes of objects, taken as absolutes, the child tends with advancing years and enlarging experience to piece these absolutes together into larger and larger wholes. While this process of relating objects is going on, deeper and finer analyses of the particulars or parts are also being made. Power to analyze and discriminate develops along with the power to synthesize. The resulting knowledge of the child is a construct developed out of materials which have their origin from within and from without. The world in which a child lives is really no greater than the number and kinds of objects to which it can attend with interest. And the environment of the child, especially the effective environment, is not all that surrounds it; it is only those parts in which the child has an interest and to which it gives attention.

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[15] The New York *Times*, Sunday, August 21, 1927.

A. Traits of the Child's Thinking

The child is a psychophysical being; that is, it is made up of a physiological structure with certain original and inherited tendencies or dispositions to action. There is the highly plastic nervous system, the muscular system, and the bony framework. Some of the inherited tendencies are sufficiently matured at birth to begin functioning, others mature later. Some of these inherited tendencies are egoistic and others altruistic. They develop and change under the stimulating influence of the physical and social environment and become the basis of such acquired traits as habit, memory, sentiments, imagination, and reasoning. In this process of taking on acquired traits or capacities, imitation, suggestion, and formal education play an important rôle.

If we may accept the view of Kurt Koffka, some form of consciousness exists at birth.[16] From this small beginning, when normal, the child's mind develops through stages to maturity. The eminent student of child psychology, Jean Piaget,[17] describes the thought life of the child under seven years as follows: It is quite unconscious of its own thought processes; it can think or reason about isolated objects only; it can make no generalizations of importance and can carry on no sustained processes of deduction; it is natively realistic, takes things as they appear to the physical senses and interprets everything in terms of its subjective ego. In other words, the child is egocentric. Because of this egocentrism, the child is not especially disturbed over contradictions and often confuses his subjective thought with outer reality.

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[16] "The Growth of the Mind," p. 126. (Harcourt, Brace and Co., 1924.)

[17] "Judgment and Reasoning in the Child." (Harcourt, Brace and Co., 1928.)

In explaining the traits of the child's thinking, Jean Piaget remarks: "We have sought to trace most of the characteristics of child logic to egocentrism."[18] By egocentrism is meant that every experience of the child has as one of its poles the child's ego, and, not being aware of this, the child takes his own point of view as absolute and fails to understand that the object is the other pole. Accordingly its knowledge lacks objectivity. M. Lévy-Bruhl uses the word "participation" for the relation which primitive man believes exists between objects and between objects and persons. M. Piaget accepts this term and applies it to the child's conception of the relation of objects and persons. Thus the child thinks that objects and persons are able to influence each other without physical contact because they are partly identical or because they can (through magic) directly influence one another. At about the age of eleven or twelve the child passes out of the stage of egocentrism. At about the same time also it makes the transition from the stage in which single objects are recognized and thought of as absolutes, to a state of "objective relativism" in which the mind begins to generalize, abstract qualities and relations from objects, and reason logically.[19]

Caution in interpreting the thought of the child is as necessary as in interpreting the thinking of primitive man. We are in danger of assuming that the child is a little grown-up and that its world is very like our adult world. Koffka holds that the "categories (ways of thinking) employed by the child in his apprehension of the world are quite similar to those of so-called primitive peoples.''[20] Professor Norsworthy, in the ''Psychology of Childhood,'' calls attention to important differences in thinking between children and adults. For example, children think less than adults because their reactions are chiefly mechanical and they are yet acquiring material for thought. Moreover, the environment, physical and personal, often inhibits thought for the child. Children's thinking is inaccurate because of limited facts and experiences, less concentration of attention, lack of critical and systematic thought, and, lastly, because they associate by wholes. Again, children's thinking will differ from that of adults in that it will appear trivial because their problems are different.

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[18] "Judgment and Reasoning in the Child," p. 201.

[19] *Ibid.*, p. 134.

B. The Child's Conception of the World

It is almost impossible to separate a discussion of the child's thinking from a treatment of the child's conception of the world. The child prior to the age of seven, it must be remembered, hardly distinguishes thought from outer reality. Being egocentric, it reads its own subjective feelings and wishes into the objects of the external world; not consciously, of course, because as yet there is no inner and outer. The child is realistic, yet imaginative, and readily accepts magic. Such objects in nature as the sun, moon, clouds, rain, trees, and mountains are believed to have been created by an artificer and not to have been evolved naturally. Father and mother are regarded as possessing unlimited power. Gradually a change takes place: father ceases to be a god in the child's eyes; nature comes less and less to gravitate around the child's ego, and the objects of the external world are explained more and more in terms of natural law.[21]

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[20] ''The Growth of the Mind,'' p. 43.

[21] *Cf.* Piaget, ''The Child's Conception of the World'' (Harcourt, Brace and Co., 1929); and Koffka, ''The Growth of the Mind,'' Ch. VI.

Koffka well phrases a popular but erroneous view of the child's world: "The child's sphere of interest has been called a world of play, a world of irresponsibility, in which unreality reigns supreme."[22] As in the case of primitive peoples, we adults forget that our distinctions and categories are the product of much social experience and that the child cannot be expected to find his realities and responsibilities in the things which so impress us. Such distinctions as alive and dead, mind and body, natural and supernatural, appearance and reality, cause and effect, subject and object, good and bad, must be acquired after much experience, trial and error, and experimentation. The child must be oriented physically and mentally before he can take over this world of the adult. Who knows through what strange and fanciful notions children pass before they become mature? The fact that the child observes and thinks in wholes or totalities, after the fashion of primitive man (Koffka's term "mental configuration" is good) rather than after the analytical mode of the discriminative adult, offers a reason why his view of the world and reality may be expected to be different. "The fixed and rigid connections that pervade our world are but the result of the domination of our non-play life; whereas to a child this domination is not originally present, and only gradually introduces itself."[23] Moreover, this non-play world of the adult is the product of the imagination and reflection of persons in active intercourse with society, supplemented by the creative work of the geniuses of the race. It has been hundreds of years in building. Should it be expected that the child could adjust itself to it or take it over without time and effort?[24]

Regarding the stages in the development of the child's knowledge of things other than itself, James Mark

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[22] "The Growth of the Mind," p. 336.

[23] *Ibid.*, p. 346.

[24] See B. Bosanquet, "Essentials of Logic," Lect. 1. (The Macmillan Co.)

Baldwin[25] observes four distinct phases subsequent to its purely pleasure-pain epoch. They are: 1. Persons are simply objects among other objects. 2. Persons are peculiar objects, interesting, active, and arbitrary. 3. The child's imitative actions in response to his ''projective'' environment give him light on himself as subject. 4. This light upon himself is reflected upon other persons and they then become to him ''ejects,'' or social beings. Studies in child psychology now generally agree in the view that the child comes to know itself as it comes to know its environment, especially as it comes to know other persons and their estimate of the child. The thinking of the child is always in terms of that part of the environment, physical and social, which it can and does become interested in. Thus neither heredity nor environment is wholly determinative of what the child becomes. The ''convergence theory'' no doubt is nearest to the truth. These phases in the development of the child's acquaintance with external objects seem to be in accord with a principle elsewhere respected by human nature. The embryologist tells us that the child passes through epochal stages in its prenatal history. The anthropologist discovers that races and peoples pass through stages in their cultural development. The historian sees the same principle at work in the history of government, language, morals, and religion.[26]

III. The Plain Man and His World

By the ''plain man'' we mean the person whose conception of the world and himself is in accord with common sense. *Common sense* is the term we employ when we refer to generally accepted views in a community. Defined in the light of our cultural environment, the plain man is one who, though he may have a smattering of scientific knowledge, has no direct acquaintance with the world through the special sciences and has no philosophy reasoned out on the basis of critical knowledge. Common-sense knowledge is usually regarded as self-evident by those who hold it. Obviously what would be common sense in one place and at one time might be uncommon at another place and at another time. Certain characteristics of the plain man and his views may be noted.

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[25] ''Mental Development,'' Ch. XI; also ''Thought and Things,'' Part II. (The Macmillan Co.)

[26] *Cf.* also Ella Lyman Cabot, ''Seven Ages of Childhood.'' (Houghton Mifflin Co., 1921.)

A. The Plain Man Is a Man of Action

The plain man is so engrossed in doing things and in making the plans necessary thereto that he seldom, if ever, stops to think out the complete justification of his action. It cannot be said that he does not think and plan. He does both, but only as they may serve as means to some practical end. He thinks but does not think of his thoughts. His aims and purposes have to do with making adjustments to concrete and practical physical and social situations. The requirements of the day's work in the shop, in the store, on the farm, in the mine—these are the matters of chief concern. Thinking and planning culminate quickly in movement and practical action. There is little turning back with critical reflection to scrutinize and examine the course of action in order to set up a systematic view of life. Moreover, the feelings and emotions, being relatively unrestrained and uncultivated, are likely to determine the path of action.

B. The Beliefs of the Plain Man Are Matters of Tradition and Public Opinion

The plain man may think that his views are the product of his own reflection, but in reality they are matters of custom and tradition. From childhood on, like a sponge, he has been absorbing the current knowledge and beliefs of the community on morals, religion, government, on plant and animal life, and even on matters having to do with his trade or vocation. The language and conversations of the street, farm and shop, as well as the books, magazines, and papers which he reads, are the media of these traditional beliefs. His interests, attitudes, sentiments and conceptions are the product of the social forces in the midst of which his mental life is born and matured. There is little chance for the plain man's escape from the gentle power of social suggestion or from the more aggressive influence of social pressure and sanctions. He may make a slight alteration upon society, but in the main he is made by society.[27]

C. The Plain Man Has a Philosophy

Despite all that has been said about the plain man and his views, it cannot be said that he has no world view and no life view. As stated before, men differ not in that some philosophize and others do not; rather do men differ in the amount and quality of the reflection which goes to the making of their philosophy. The plain man has his physical senses which mediate to him a world of objects. These observations go deep enough to teach him that in many cases appearance is not reality; for example, that the stick in the water only appears to be bent, and that the cavity in his tooth only appears large when it is actually small. But he may not know why it is that this distinction must be made and what its ultimate bearings are. In the matter of the sun's appearing to rise in the east and set in the west, his knowledge may have or may not have come to distinguish between appearance and reality. In any case he will have a view and it will enter into his conception of the physical world. To the extent that it involves some discrimination and interpretation in the light of current popular views, it is a theory and so far a philosophy. The plain man's conception of society and moral obligation involves the same principles. Personal observations supplemented by elementary reflections make obvious certain distinctions; these are further organized unconsciously or semi-consciously under the pressure of the prevailing social customs and standards. Thus a life view is worked out. In consequence, reality comes to be what he can count on, what is permanent and abiding, what has worth and yields satisfactory returns, in the physical and social world. It is probable that he will be a naïve dualist, distinguishing a world of physical or material objects from a world of mind and accepting both as real. In a word, the philosophy of the plain man is the sum total of his common-sense beliefs, more or less loosely held together.

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[27] See Robert E. Park and Ernest W. Burgess, "Introduction to the Science of Sociology," Chs. VII, XII, and XIII. (The University of Chicago Press, 1924.)

IV. The Medieval Man and His World

It is our purpose here to explain through a specific historical reference the characteristics of a type of mind which is bound by tradition and authority. We have chosen the medieval man and his type of mind, not because it is the sole historical instance of thought subordinated to tradition and authority, but because it is a conspicuous instance of how a civilization led by cultivated minds may be unprogressive. Equally reactionary minds and movements of thought have appeared (they still appear) in the political and economic worlds. It should not be inferred from what follows, therefore, that respect for tradition and authority is in itself bad. Even a scientific and spiritually progressive civilization cannot safely dispense with either of them if it would maintain itself. What should be clear, however, is that open-minded intelligence is necessary to determine rightly how tradition, authority, and power are to be employed in directing civilization. Never did a civilization set a higher value upon human personality or exercise more real concern for human values generally, than did the medieval, and seldom have men been more mistaken in how to secure these values.[28]

A. The Cultural Life of Medieval Man

The Middle Ages occupy a period of approximately one thousand years between the fall of Rome (476 A.D.) and the fall of Constantinople (1453). The first half of this period is referred to as the Dark Ages, because in it the light of learning burned dimly throughout Europe. The crude and illiterate Teutonic tribes had invaded Rome; the power and authority of the Empire had crumpled through weaknesses within as well as forces from without; the Christian Church had entered upon the stage as the most powerful social institution; while the scene of Western civilization was being shifted from the south of Europe to the north, and from one branch of the Aryan family, the Græco-Italic, to the Teutonic.

The second half of the Middle Ages, 1000 to 1500, is called the Age of Revival or the Era of the Schoolmen. During this period the science and wisdom of the early Greek and Roman civilizations were recovered, in part directly and in part from the Arabs and Mohammedans. Ptolemaic astronomy, Roman conceptions and practices in government and law, Greek scientific conceptions of plants, animals, and man, society, and morals,—all were judiciously blended with the Hebrew-Christian view of the world and human life. The Church was now well organized on hierarchical lines; and, having trained up a great body of adherents who trusted implicitly in her claims to supreme authority, she was able to command resources and men in all walks of life. Education, family life, economic activities, and even the state were subject to her will and direction. In a word, the Middle Ages were a period of origins—of peoples, languages, institutions, and conceptions of life. A new civilization was being born, in which were blended elements from the classical, Hebrew-Christian, and Teutonic cultures.

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[28] See J. H. Randall, Jr., "The Making of the Modern Mind," Book I. (Houghton Mifflin Co., 1926.)

The medieval mind is very definitely a fusion of diverse cultural elements, molded and shaped by the Church with emotional warmth and intellectual care. The Church had won her place of leadership and power after a long period of struggle and conflict. Her spirit and character had been fashioned in part by these experiences. With her basic dogmas and conceptions fixed by the tenth century (mostly by the sixth), with a powerful ecclesiastical hierarchy patterned after the organization of the Roman government, and with the political and civil authorities subordinated to her will, the Church was in a position, through the Papal head, to play an imperial rôle in all the affairs of social life. By force of necessity she had assumed the task of educating the barbarian hordes in the arts and sciences created by the Greek and Roman civilizations. Like children the Teutonic peoples had to be taught the rudiments of civilized life. Beliefs and practices in religion, among other things, were handed down ready-made to these unlettered peoples. Confident of her divine origin and mission, and secure in her position as the custodian of the revealed Word of God, the Church found it comparatively easy, through education and other agencies of social control, to dominate the whole life of man. It should be added that in many, if not most respects, it was a glad and willing obedience that the educated as well as the illiterate gave to the Church. There were, of course, conspicuous exceptions. The emotions, will, and actions of the people had been directed for centuries to the one main purpose of life, namely, to gain eternal life. Accordingly, to the Church, into whose hands had been committed the keys of heaven, was given a loyal and respectful devotion. Such, in brief, is the social setting of human life and thought in the Middle Ages.

B. Mental Traits of the Medieval Man

What were the characteristics of the medieval mind, and what were the objects of vital interest and concern to the men of the Middle Ages? These questions can best be answered by an enumeration of some of the beliefs common to scholar, saint, and layman.

Briefly, some of them are: (1) Belief in two kinds of knowledge; namely, natural, or that secured through purely human means and sources, and supernatural, or that especially *revealed* by God. Natural knowledge was regarded as useful in secular affairs, but revealed knowledge was believed to be necessary for man's salvation. Since the soul's salvation was of primary consideration, natural knowledge was subordinated both in importance and authority to revealed truth. Most medieval thinkers held that there could be no conflict between natural and revealed knowledge. Revealed knowledge, however, might transcend natural knowledge and in such cases, of course, it was to be accepted on faith. (2) Belief in the Church as the custodian of revealed truth and the sole administrator of divine grace. Acceptance of this teaching made the Church an object both of fear and reverence. The church, in consequence, assumed the right to determine orthodoxy and heterodoxy. (3) Belief in the eternal and unchanging character of truth, particularly revealed truth. Natural knowledge might be either eternal or changing. (4) Belief in the utter sinfulness of the natural man. The best moral effort of man and the highest of human virtues were regarded as insufficient for salvation without the aid of divine grace administered through the Church. (5) Belief in miracles; that is, God (or a saint as his agent) might intervene to change the usual order of events in nature. The Author of nature was believed to have the right and power to interpose his will at any time. In keeping with this frame of mind, the Ptolemaic astronomy was authenticated by the Genesis account of creation. (6) Belief in the world as the stage of the drama of human salvation. It was believed that the world was created to provide a place in which man, formed in the image of God, should be tested in a period of probation. When God has finished his purpose with man and all have had an opportunity to accept God's offer of mercy and grace in Christ, then the physical world will be destroyed. (7) Belief in eternal happiness in heaven as the reward for faithfulness in man's earthly life. Men are only "strangers and pilgrims here below," earth is only a tenting place, and heaven, the transcendent world of spirits, is man's true home, whither he enters, not by his own merit or effort, but by aid of divine grace.

Within such a setting of religious organization, belief and practice as we have described, it is not at all strange that such traits as the following should characterize the medieval mind:

1. **Reverence for tradition and authority.**—Tradition and authority are the point of reference for testing all matters pertaining to knowledge and the management of human affairs. Such an attitude obviously puts little confidence in first-hand observation, experimentation, and critical analysis. The major premise on all questions of life had been given either through the teaching of the Church or in the works of the ancient scholars approved by the Church. It was necessary only to reason by immediate inference or by deduction to conclusions from these premises. Theology was the queen of the sciences. Reasoning on matters of science, morals, and secular affairs generally might agree with but dared not contradict the conclusions of the approved theology.

2. **Obedience and subordination.**—In politics, education, science, literature, art, philosophy and morals, as well as in religion, the influence of the Church was paramount. Even in the family and in social life the offices of the Church were recognized. Awe and fear mingled with reverential devotion impelled men in every station in life,

from the feudal lord to the humblest serf, to render complete obedience and subordination to the will of the Church. As guardian of education, censor of morals, and final court of authority on matters both intellectual and spiritual, the Church stood at both the center and circumference of human affairs.

3. An otherworldliness of interest.—Since the Church had focused all attention and interest upon heavenly things, scholars naturally spent their time studying matters not perceptible by the senses—God, angels, saints, eternal forms and patterns. Thus it was the world of the unseen, the realm of immutable patterns and forms, that occupied the center of interest. On this account also we find the great prominence of theology and formal logic. Astronomy, physics, chemistry, physiology, economics, and like sciences, if studied at all, were carried on in the traditional manner, or by purely speculative methods. The senses were regarded as greatly inferior to reason and were largely neglected as an aid in the search for knowledge. Monasticism, with its accompanying ascetic practices, bears testimony to the seriousness with which the medieval mind took the churchly ideal of man's true destiny, the weakness of the flesh, and the deceptiveness of the physical senses.

V. The Scientific Man and His World

A scientific man is a person who avails himself of the knowledge provided in the special physical and social sciences and who in the light of these organized bodies of knowledge develops a reasoned view of the world and life. For the solution of the concrete problems of daily life and his vocation, he will seek the aid of these tested forms of knowledge. To such questions as morals, religion, economics, and government, he will bring the best thought of his time. In the first place, *he will be a person who has information;* that is, the facts relevant to his problem, or he will know how and where to secure them. Secondly, *he will know the principles of sound reasoning* so that facts may be properly classified and organized into coherent theories. Thirdly, *he will be open-minded,* unbiased and unprejudiced in the treatment of evidence. Tradition, authority, and sense experience, in short, all possible sources of knowledge, will be explored; but in every case fidelity to the facts of experience and rational consistency will be the tests of truth. The remaining chapters will suggest more in detail how this type of individual will proceed to solve his problems.

Whether, and in what sense, philosophy can be scientific is a question to be treated in Chapter IV. There are scientists, and even philosophers, who contend that science is the last stage of knowledge. Beyond the measurable data of sense experience and exact calculations based upon them, they hold, we cannot go. Any attempt to make use of the moral, religious, and esthetic experiences, or even the social sciences, leads to confusion and contradiction. This viewpoint, as we shall see, is narrow and provincial; it would remove most of the so-called sciences from the class of scientific studies.

A. The Scientific Mind Compared with Other Minds

Before going on, however, let us relate this type or level of human experience to the other four just described. It may appear that we have stressed differences; but we do not wish to ignore resemblances. The child, it is said, is father to the man. In a similar way are the primitive man, the plain man, and the medieval man preparatory to the scientific man. Like them, the scientific man is a creature of biological wants, but he is different in that through critical observation and experimentation he has come to know of what stuff he is made. Furthermore, he has learned, in a measure at least, to react reflectively and selectively to those wants and desires. Like them he lives in a physical world which sustains his body, but he has learned to control its elements and make it do his bidding. Like them also he lives in a social world far more complex and rich with custom and tradition, but because of historical and sociological studies he knows how the institutions of society were formed and he sets about consciously to remold them after his intelligent purpose. Obviously the scientific mind differs less from the medieval than from any other type herein described. The medieval man reasons logically, as does the scientific man, but his premises are based on tradition and authority largely, while the premises of the scientific man are the data of sense experience. Thus the medieval mind is reflective, but not scientific. In a word, the scientific man differs from the other four types in that he faces all the problems of his physical and social environment with a searching and inquiring mind, with caution, deliberation, and an insight born of criticized knowledge. These attitudes of mind are present in incipient form in the child, in primitive man, and in the plain man. They come to a high state of development in the medieval mind; in many, if not most respects, they are the same as those in the scientific man. In the scientific man, however, these attitudes are developed, matured, and specialized. That these capabilities and attainments are present in varying degree among scientific men is too obvious to need statement.

But how will the scientific man's world view, or life view, relate itself to those of the other types? Certainly not by rejecting them as ridiculous and false. The scientific man, for instance, cannot reject as false the child's and the primitive man's sense knowledge of the sun's rising in the east and setting in the west. These facts are patent to the senses. These items of experience, however, can be taken up into a higher body of facts revealed in geography and astronomy, and be given such a setting as there to appear only as part of the truth. They remain facts but of slight significance; they are "appearances" and, as such, they are to be included, not excluded, in the final picture. The plain man knows that sunshine, rain, and fertility are necessary to a bountiful harvest. The trained agriculturalist knows these things also, but his understanding is wider and deeper; he knows the chemistry of his soil and the chemical requirements of his plants and the amount of sunlight required. False notions, of course, are often found among children, primitive people, and plain people. But what truth they have found and realized in experience is not nullified by science and reflection; on the other hand it is supplemented, filled out and oriented in a wider setting, corrected, and its implications developed. The success of any science is measured by the extent to which its unifying principles, concepts, and laws comprehend all the facts.

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CHAPTER IV

THE RELATION OF PHILOSOPHY TO SCIENCE AND OTHER CULTURAL PURSUITS

IN THE preceding chapter we were studying some of the typical planes of experience which may be found when man's sense of his relationship to the world is examined. We saw that there is no clear line of separation between these levels of knowledge. We observed that the reflective man's view of the world and life is molded largely by his acquaintance with the results of scientific investigation. This chapter should make clear not only the general characteristics of scientific knowledge, but also the manner in which the sciences and philosophy represent still further planes or levels in the organization of experience. Just as it was found impossible to separate completely the plain man's view of the world from the child's, so we shall discover that the scientist's view of the world and human life is not completely separable from the common-sense view. In fact, as Thomas Huxley once said, "Science is nothing but trained and organized common sense."

The present chapter, however, is not limited to an examination of the relation of philosophy to the sciences. We shall be interested also to show the bearing which philosophy has upon other human pursuits in the field of culture. The aim of the chapter will be to supplement the discussion with respect to the sciences, physical and social, with a treatment of the philosophical import of such cultural interests as morality, religion, and literature. Let us commence with a study of the interrelationships between philosophy and science.

I. Philosophy and Science

A. The Meaning of Science

The English word *science* comes from the Latin *scire,* which means *to know. Science* thus means knowledge that has been secured through observation, classification of facts, experimentation, calculation, and reasoning. Scientific knowledge is therefore critical, approximately exact, and well organized.

The word *science* in recent times has taken on a twofold meaning. (1) In one sense it means the particular bodies of knowledge acquired through a systematic interpretation of some part of the world; for example, astronomy, physics, chemistry, and biology. From this standpoint it would be more appropriate to speak of *sciences* than to speak of science, for there are many sciences which comprise our knowledge of the cosmos. (2) The second sense in which the word *science* is used is that of method or plan of procedure in securing and testing knowledge. As Karl Pearson says, "The unity of all science consists alone in its method and not in its material."[1] Here the emphasis is placed upon the frame of mind with which an investigator does his work. It means disinterested inquiry, open-mindedness, an unbiased and unprejudiced attitude of mind. Science in the sense of the specialized bodies of knowledge—the conclusions arrived at after prolonged and patient research—is constantly changing. "There is nothing in the world," declares A. D. Ritchie, "as ephemeral as scientific theory, nothing so musty and ancient as old scientific theory."[2] A body of knowledge which is a particular science is a product of growth, in many instances, through centuries of time. Research and study to-day are requiring not only addition of information, but also a modification and reorganization of the accepted facts, principles, and laws. Science in the sense of method of procedure is relatively permanent, although here also refinements are constantly being made.

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[1] "The Grammar of Science," p. 12. (The Macmillan Co., 1911.)

[2] "Scientific Method," p. 14. (Harcourt, Brace & Co., 1923.)

A few statements indicating how authorities in the philosophy of science define the meaning and scope of science follow:

> The classification of facts, the recognition of their sequence and relative significance is the function of science, and the habit of forming a judgment upon these facts unbiased by personal feeling is characteristic of what may be termed the scientific frame of mind. . . . The material of science is co-extensive with the whole of life, physical and mental, of the universe, and furthermore, the limits to our perception of the universe are only apparent, not real. It is not exaggeration to say that the universe was not the same for our great-grandfathers as it is for us, and that in all probability it will be utterly different for our great-grandchildren. . . . The goal of science is clear—it is nothing short of the complete interpretation of the universe. But the goal is an ideal one—it marks the direction in which we move and strive, but never a stage we shall actually reach. The universe grows ever larger as we learn to understand more of our own corner of it.[3]

> Science is "the complete and consistent description of the facts of experience in the simplest terms." . . . *The aim of science is to describe the impersonal facts of experience in verifiable terms as exactly as possible, as simply as possible and as completely as possible. It is an intellectual construction,—a working thought-model of the world.* . . . Science is not wrapped up with any particular body of facts; it is characterized as an intellectual attitude. It is not tied down to any particular methods of inquiry; it is simply sincere critical thought, which admits conclusions when they are based on evidence.[4]

If we were to summarize the aim and spirit of science, the summary would run somewhat as follows:

1. Acquiring of the facts by:
    a. Impartial observation.
    b. Experimentation.

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[3] Karl Pearson, "The Grammar of Science," pp. 6, 14, 15. (By permission of The Macmillan Co., publishers.)

[4] J. Arthur Thomson, "Introduction to Science," pp. 40, 56, 57. (Henry Holt and Co., 1911.)

2. The description of the facts by means of:
    - *a.* Definition and general description.
    - *b.* Analysis and synthesis.
    - *c.* Classification.
3. Explanation of the facts in terms of:
    - *a.* Proximate cause, that is, invariable antecedents.
    - *b.* Functional relations, that is, change in one thing compared with change in another.
    - *c.* Natural laws, that is, uniformities of behavior.
4. The spirit or mood of science, as contrasted with the practical and emotional attitude, is characterized by:
    - *a.* Disinterested concern for the facts and for truth.
    - *b.* Continuous appeal to experience.
    - *c.* Cautiousness of statement.
    - *d.* Clearness of vision—insight.
    - *e.* A sense of the interrelationship of things.[5]

B. General Relationships between Philosophy and the Sciences

Before treating in a specific way of the relationship of philosophy to the sciences and other disciplines, it may be well to give attention to some of the general relationships of philosophy and the sciences.

1. In the course of the history of the specialized forms of knowledge the various sciences split off from philosophy in the following order: mathematics, astronomy, physics, chemistry, biology, psychology, and sociology. For Aristotle, philosphy was inclusive of all sciences.

2. Modern philosophy—that is, philosophy since the fourteenth century—developed in the closest association with the special sciences. The working concepts of the dominant science in any century, together with the mood of these sciences, came more and more into prominence in philosophy. The world view and life view of any century reflect the development in the predominant sciences of the century.

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[5] *Cf.* Thomson, "Introduction to Science," Ch. I; also the leaflet "The Scientific Method," Character Education Institution, Chevy Chase, Washington, D. C.

3. The spirit of philosophy is compatible with the spirit of science. Both exhibit an impartial and unbiased concern for the facts, for truth, and for organized and systematized knowledge. In method science employs observation and classification of the facts of sense experience in giving its descriptive and causal explanation, while philosophy employs reflection or reasoning as its prevailing method. The methods of science are suitable for discovery and stating relationships between facts and phenomena; the method of philosophy is adapted to discovering inner connections of meaning, value, and purpose. In the end the difference here is one of degree rather than in kind.

4. The particular sciences are primarily descriptive in aim; they are concerned with measurement, analysis, causal and functional explanation, prediction, and control; while philosophy is interpretative in aim. The difference here is twofold. In the first place, the diversity is one of scope or range of interest. A special science, such as chemistry or biology, taking as it does a selected type and area of material, is concerned with giving the simplest possible descriptive explanation. In the words of C. D. Broad: "The object of philosophy is to take over the results of the various sciences, to add to them the religious and ethical experiences of mankind, and then to reflect upon the whole. The hope is that, by this means, we may be able to reach some general conclusions as to the nature of the universe and as to our position and prospects in it."[6] The sciences thus furnish raw material for philosophy. Philosophy takes the partial pictures of the world, pictures taken from particular points of view, and, through a constructive intellectual activity, pieces them together into one composite whole. Mr. Bertrand Russell puts it well: "Science tries to collect facts into bundles by means of scientific laws; these laws, rather than the

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[6] "Scientific Thought," p. 20. (Harcourt, Brace & Co., 1923.)

original facts, are the raw material of philosophy. Philosophy involves a criticism of scientific knowledge, not from a point of view ultimately different from that of science, but from a point of view less concerned with details and more concerned with the harmony of the whole body of special sciences.''[7]

A second difference between philosophy and the sciences consists in the fact that while the sciences are content with describing the objects, events, and processes of nature in terms of proximate causes or effects, philosophy is interested in the final or first cause, in the ultimate purpose, meaning and value of the same objects, events and processes. The special sciences are, for the most part, deterministic and mechanistic. Mathematics is the instrument *par excellence* by which progress is made in the sciences. Accepting the *dictum* of Galileo, namely, that what we can measure we can know, the sciences have gone forward putting some kind of a ''foot-rule'' upon all observable objects and phenomena. Relations are viewed as completely describable in quantitative and hence mathematico-symbolic form. All this is entirely compatible with the central twofold aim of the sciences, namely, control and prediction; but the unique intrinsic and qualitative character of objects and events are either entirely overlooked or slighted.

Both the descriptive and interpretative or evaluative attitude and treatment of the world are essential. They are related as parts to the whole. The descriptive account enables man to know what exists and to know how facts and phenomena are related causally and functionally. Life may be shaped and directed accordingly. Until the age of modern science, with its devices and instruments for measuring and calculating probabilities, man was more or less a victim of circumstances. He was able to control neither the outer nor the inner world of processes and events. Through the achievements of science in methods and knowledge, man is able to foresee, predict and control the events of the material world and those within his own life. By taking over the control of his environment and of his inner experiences, man has taken over very largely the control of his destiny. But no particular science or any group of sciences can tell him what destiny is fitting or becoming to man. It is the province of philosophy which views life and the world *whole,* to determine the aim, value, and meaning of life. The sciences are not concerned with values as such. Philosophy thus supplements the sciences and the sciences supply philosophy with material.

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[7] ''Philosophy,'' p. 2. (W. W. Norton and Co., Inc., 1927.)

5. Each of the special sciences makes certain assumptions. Philosophy studies these assumptions in a critical way and compares the assumptions of the several sciences. "This criticism of categories and systematizations is the chief service that metaphysics has to render science," says J. Arthur Thomson.[8] Philosophy is concerned to take the assumptions and conclusions of the several sciences and construct from them a unified and coherent view of the world. This is not an easy task, because the assumptions and conclusions of certain sciences are not compatible with those of other sciences; for example, those of the physical sciences with those of the social.

Both science and philosophy offer generalizations. They differ, however, in the extent or scope of their generalizations, those of the sciences being narrower. The laws and theories of a particular science are held to obtain within the scope of a field or area studied, and not further. Should a particular science go beyond its limited field and compare its assumptions and conclusions with those of another science, it would at once cease to be science and become philosophy. For example, should a physicist, chemist, biologist, or psychologist, having accepted mechanism as a working conception in his chosen field, extend it to the cosmos as a whole, he is no longer a scientist but a philosopher. The methodology of a science, of course, may be one thing and the philosophy of the scientist quite another.

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[8] "Introduction to Science," p. 129.

6. A further task of philosophy in relation to the sciences is the adjustment of the assumptions and conclusions of the sciences on the one hand with the claims of religion, morals, and the fine arts on the other. In other words, philosophy must not only give a world view but a life view. To quote Professor A. N. Whitehead:

> I hold that philosophy is the critic of abstractions. Its function is a double one, first of harmonizing them by assigning to them their right relative status as abstractions, and secondly of completing them by direct comparison with more concrete intuitions of the universe, and thereby promoting the formation of more complete schemes of thought. It is in respect to this comparison that the testimony of great poets is of such importance. Their survival is evidence that they express deep intuitions of mankind penetrating into what is universal in concrete fact. Philosophy is not one among the sciences with its own little scheme of abstractions which it works away at perfecting and improving. It is the survey of sciences, with the special object of their harmony, and of their completion. It brings to this task not only the evidence of the special sciences, but also its own concrete experience. It confronts the sciences with concrete fact.[9]

Whitehead goes on to state:

> Shelley and Wordsworth emphatically bear witness that nature cannot be divorced from its æsthetic values; and that these values arise from the accumulation, in some sense, of the brooding presence of the whole onto its various parts. Thus we gain from the poets that a philosophy of nature must concern itself at least with these five notions: change, value, eternal objects, endurance, organism, interfusion.'' [10]

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[9] ''Science and the Modern World'' (1925), pp. 126–127. (By permission of The Macmillan Co., publishers.)

[10] *Ibid.*, p. 127. (By permission of The Macmillan Co., publishers.)

C. Philosophy and the Natural Sciences

In the discussion which follows concerning the relation of philosophy to the special sciences and other disciplines no attempt has been made to conform to a critical classification. The order and arrangement is adapted to suit the convenience of an elementary, introductory study of philosophy and the sciences. It may be interesting to observe at this point that while philosophy in America, following the British and German tradition, is mainly a criticism and coördination of the natural sciences, with some attention paid to the social sciences, the Italian tradition takes philosophy chiefly as a criticism of history, history as something lived through. Apparently it is difficult even for the philosopher "to see life steadily and see it whole." As has already been affirmed, we take the view that philosophy is a criticism of life and of the whole of life—not only as life is revealed in the social as well as the physical sciences but as it is also disclosed in the esthetic, ethical, and religious enterprises of man. Our immediate interest, however, is the relation of philosophy to the natural sciences.

It has become a matter of general practice to distinguish between natural or physical sciences and the social sciences, meaning by the former such studies as physics, chemistry, astronomy, geology, and geography, and by the latter such studies as history, government, economics, ethics, and sociology. In addition to these two types there are the biological sciences, which are concerned with the structure and function of living organisms. Man very early became interested in the objects of his physical environment, the heavenly bodies, the soil, water, plants, and animals. The necessity to provide for himself the means of livelihood supplemented his native curiosity and he soon found himself reflecting upon his experiences with nature. The physical sciences, in consequence, were among the first to develop.

Each of the natural sciences makes its observations in its selected field and organizes the material which it gathers in the form of sense data into conceptual descriptions and explanations. In doing this it makes certain fundamental assumptions. For example, every physical science assumes the uniformity of the causal order. As Edwin E. Slosson says: ''There is one principle that underlies all of the sciences as it does all ordinary life and yet it is not often specifically pointed out.— This is the invariance of nature or the constancy of cause and effect; that under the same circumstances the same thing will happen always anywhere.''[11] Given certain antecedents, certain results or consequences will follow invariably. This principle never has been and never can be completely verified. Just what kind and degree of *order* and *uniformity* exists in nature is a matter which is slowly and with painstaking effort being discovered. The more clearly and fully our knowledge of nature becomes the more are we keenly aware of the discontinuities and dissimilarities in nature. A. D. Ritchie, in his work on ''Scientific Method,'' maintains that it takes an expert to find the orderly processes and calculate them in the form of laws. Yet every one of the physical sciences assumes that when reflective thought is applied to the physical cosmos its structure and order may be known. The implications of this assumption it is the task of philosophy to explore and reveal.

Again, the natural sciences, in common with the social and the biological sciences, assume that when areas of material are abstracted for study from the whole of the world in which they constitute but a part and are treated by the principles and methods of the particular science, the results give an adequate account of the part in question. Moreover, there is a conflict for priority of concepts not only between the physical sciences on the one side with the biological on the other, or between the physical sciences on the one side and the social sciences on the other, but also between the sciences of the same class or type. The controversy among biologists over the question whether organisms are adequately explained in terms of physico-chemical reaction or whether a ''vital principle'' must be invoked, is a case in point. In consequence there is a tendency to make a *reduction* of the concepts of the social sciences and psychology to physiology, of physiology to chemistry, and of chemistry to physics. Obviously, this reduction tendency is in harmony with the law of parsimony, but the question remains: does it do justice to the facts? Philosophy is interested in this problem of the sciences. It is concerned to take an objective view of the matter, and, while recognizing the respective classes of the sciences, it is also interested in recognizing the factual claims of the religious, moral, and esthetic experiences.

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[11] ''Chats on Science,'' p. 208. (The Century Co., 1924.)

1. **Philosophy and physics.**—Each of the physical sciences employs certain working concepts as principles for the organization of the raw materials of experience in its field. Physics, for example, uses such concepts as *matter, energy, ether, space, time, cause,* and *order.* It speaks of a world of atoms and electrons moving in an ether continuum. This, of course, is a conceptual construction, the product of the scientific imagination developed to explain the perceived phenomena of mass, motion and energy interrelated with space and time. All of this is somehow in process of evolution. This complex world of the physical scientist, moreover, is one in which mechanism in the most deterministic sense is assumed to obtain. No spontaneity or freedom, no ends or values, are in process of realization, if the fundamental assumptions are taken seriously. Now, as Professor Leighton says:

> The physicist's world has a *logical reality;* it is *valid,* but it may or may not have *existential reality.* It may be that electrons and the ether exist. . . . At present they are hypothetical extensions and supplementations of empirical reality, justified by their logical uses. If they really exist they must have more qualities and a

> more determinate character than the physicist needs, for his abstract purposes, to endow them with. They cannot, if actual, have mere extension, figure, motion, mass. They must have potential color, sound, temperature, feel. And they must be determinate things with some degree of individuality. If the electrons and the ether are experienced by some beings they are actual realities, not mere logical postulates. If they are capable of being perceived they are real. For in order that anything may be existentially real it must be actually perceived or capable of being perceived.[12]

Scientists sometimes charge philosophers with being abstract because they deal with ideas and not with things. Philosophers sometimes reply that the special sciences isolate things from their setting in the smaller and larger wholes of which they are integral parts. For example, an atom, or a cell, or a star, or a human being is such an isolated thing. The fact of the matter is that the terms *abstract* and *concrete* are variable in meaning. The term *abstract,* from the Latin *abstrahere,* means *to draw off.* It is used in two senses: (*a*) to consider a quality or attribute apart from the thing in which it adheres, for example, hardness and redness; and (*b*) to discriminate an object, say a tree in the midst of the forest or a color among other colors, or a human individual amidst society. The term *concrete* also has two meanings: (*a*) It may be used to refer to the thing or object in which a quality inheres, as for example, hardness and redness as abstract qualities belong to the concrete object apple or stone; and (*b*) it may be used to designate wholeness, as for example, the organism, society, or planetary system from which a part has been selected, and hence abstracted, for study.

When it is remembered that physics has a history and that its leading principles and concepts are products of growth and development; when it is understood that there has been not only change in the use of fundamental ideas but also important differences among scientists in the definition and hence use of these concepts, it becomes clear that there is need for such a discipline as philosophy to offer comparison, criticism, and adjustment. Especially is this *criticism* imperative before the point of view or the working concepts of any particular science can be taken over and applied to the cosmos as a whole. To say that the world has no meaning or value because physics, chemistry, and astronomy employ a mechanistic and deterministic approach to their materials is to carry the implications of science beyond their legitimate scope. Such a conclusion represents a generalization based upon the explorations into but a part of the universe.[13]

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[12] "Man and the Cosmos," p. 247. (D. Appleton and Co., 1922.)

This discussion of the relationship between philosophy and physics is illustrative of the relation between philosophy and the other physical sciences. Physics is concerned with the general properties and relations of matter and energy, while chemistry is interested in the kinds of substances or elements and their possible combinations and transformations. Astronomy, the science of the heavenly bodies, overlaps very much with physics and chemistry, and in addition involves considerable higher mathematics. Chapter IX develops further and in more detail the relationship between the physical sciences and philosophy. Chapters X and XI indicate the relation between philosophy and the biological sciences.

2. **Philosophy and mathematics.**—Mathematics has left a deep impression on the history of philosophy. This can be understood when it is pointed out that mathematicians in some instances have turned to writing philosophy, and,

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[13] Speaking of science and its need of philosophy, Professor A. N. Whitehead says: ''Science has never shaken off the impress of its origin in the historical revolt of the later Renaissance. It has remained predominantly an anti-rationalistic movement based upon naïve faith. What reasoning it has wanted, it has borrowed from mathematics, which is a surviving relic of Greek rationalism, following the deductive method. Science repudiates philosophy. In other words, it has never cared to justify its faith or to explain its meanings; and has remained blandly indifferent to its refutation by Hume.'' And again, ''If science is not to degenerate into a medley of *ad hoc* hypotheses, it must become philosophical and must enter upon a thorough criticism of its own foundations.''—''Science and the Modern World,'' pp. 23–24, 25. (By permission of The Macmillan Co., publishers.)

in other instances, philosophers trained in mathematics have carried over mathematical methods and concepts into philosophy. Among the ancient Greeks, Pythagoras and Plato developed views of nature and the world which from the point of view of order, form and relationships reflect the symmetry and perfection of forms in mathematics. On the door of Plato's Academy were inscribed the words: "Let no one enter here who is ignorant of geometry." In modern philosophy, Descartes, Spinoza, and Leibnitz, each in his own way, develops a view of the world and life which shows the influence of mathematics. Descartes invented analytic geometry, and Leibnitz (with Newton) devised the infinitesimal calculus. It is no more than natural that their philosophies should reflect the deductive and rationalistic method of mathematics. Descartes and Spinoza developed systems of philosophy patterned after geometry. Beginning with what seemed to them axiomatic truths, they reasoned deductively to conclusions which appeared as certain as the premises. Descartes' dualistic philosophy is felt in present-day philosophy, and Spinoza's monism is particularly influential in current idealism and realism. Leibnitz employed the basic principles of his infinitesimal calculus in constructing his monad theory of reality, and this has left its impress upon pluralistic idealism since his time. Contemporary realism in philosophy reflects the mathematical conception of method, function, and relations. Bertrand Russell's logical atomism is a good example of this influence.

Logic is a branch of philosophy and is usually classified with mathematics and geometry among the formal sciences. Symbolic logic, of course, has adopted the language of algebra. When the philosopher deals with such questions as the nature of space and time, number, order and class, quantity, quality and relations, unity and plurality, identity and diversity, continuity and discontinuity, the finite and the infinite, he is dealing with problems of interest to pure mathematics. These questions, so far as philosophy is concerned, belong to that division of logic called epistemology or theory of knowledge. In this sense logic is a study of the nature and validity of the presuppositions, principles, and laws of thought. The methods, principles, and concepts of mathematical thinking come within the scope of theory of knowledge. Furthermore, since mathematics in all its forms is applied in the sciences, particularly the physical sciences, and the concepts and principles of the sciences are of central concern to philosophy, in a twofold sense mathematics and philosophy are intimately related.[14]

D. PHILOSOPHY AND THE SOCIAL SCIENCES

Such disciplines as history, government, law, economics, sociology, and education, to mention no other social sciences, involve philosophical problems of far-reaching importance. It is true that each of these studies has an important and useful task in securing and making available to society a vast collection of factual data, information and descriptive knowledge of other sorts. But they do not stop there. Each of them deals in some way with man and his relations with his fellow men. None of them is satisfied—nor should it be—with telling *what is* or *what has been;* each invariably goes on to make comparisons, to weigh and evaluate institutions and modes of life. This at once carries the discussion into the field of social philosophy, where ethical considerations are at stake. And ethics is a branch of philosophy.

Let us inquire briefly how some of the social sciences raise philosophical problems:

1. **History.**—History may be defined as a narrative and descriptive study of past social events in temporal and causal sequence. These events may be those of a nation, a race, an institution, a science, or an art. They are usually treated with a view to recording and explaining

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[14] See Bertrand Russell, Preface to "Introduction to Mathematical Philosophy" (The Macmillan Co., 1919); A. N. Whitehead, "Introduction to Mathematics" (Henry Holt and Co., 1911); Leighton, "Man and the Cosmos," Ch. XI.

the steps in human progress. More and more history involves an evaluation and comparison of institutions, policies, and leaders. Now it is clear at once that to speak of progress and of evaluation implies a social philosophy, and the taproot of social philosophy is ethics. When the historian as much as says that war is an evil and education is a boon, he is making moral or value judgments. When questions of poverty and wealth, weak and strong governments, the Church and the State, are at issue, or when the question of the intervention of one State in the affairs of another is involved, the historian can scarcely avoid making ethical judgments.

2. **Government.**—Politics or government describes the different forms of political unities called states and the manner of their operation. It usually offers a classification of governments; as for example, monarchy, aristocracy, and democracy. It invariably goes further and compares the forms of government with a view not only of revealing structure but also in order to show which is best adapted to promote the welfare of the people governed. Now the question of human welfare is not to be settled in the light of government alone, important though government is. Political science also discusses questions of rights and obligations, of treaty violations and fulfilment, of peace and war. The complete study of any one of these problems carries the inquirer deep into the realm of social philosophy.

3. **Law.**—Law in a legal sense consists of those rules, ordinances, and statutes, in the form of a statement of the limits of rights and obligations enacted or established by society for its control, protection, and welfare. The laws of a people at any time represent a crystallization of the public opinion and common sentiments of the people. Laws give definiteness and permanence to the best traditions and sentiments of a people. The working basis of all statutory law is a conception of the worth of man and of social institutions. When law is treated in terms *not of what it is*

but in terms of *what it ought to be,* then it is a matter of social philosophy.

4. **Economics.**—Economics may be thought of as a descriptive study of the production and distribution of wealth, including the mechanisms employed. However, when economics compares systems of production and distribution, when it passes beyond the exchange value of goods and the mere structural character of the means of production and distribution, it enters the field of ethics. Such questions as the relation of capital and labor; government ownership of the means of production; international debts; poverty, crime, and health; wages, standards of living, and dependency; unemployment, strikes, boycotts, hours of labor, children and women in industry; the financial obligation of a nation to its soldiers and their dependents—when economics treats these questions, the human element comes into prominence, and this is a question of morals and value.

5. **Sociology.**—Though primarily interested in treating the origin, structure, and growth of social institutions, sociology tends more and more to evaluate institutions in terms of social welfare. It is not satisfied with a purely descriptive account, but tends to set up standards or forms of social progress. For example, when one form of the family is compared with another, one type of industrial or economic life with another, the terms good and bad, better and worse, or their equivalents, are brought into use. So it is when sociology studies religions, legal and political institutions, or even the social implications of capitalism, socialism, or communism. Sociology is interested in social pathology, poverty, unemployment and child labor; industrial accidents, occupational disease, crime and the criminal; juvenile crime and penology in general; immigration, housing, the social causes of disease, the liquor problem and narcotics. Sociology also studies the formation of social attitudes, and it undertakes to appraise them in terms of social welfare. Each of these problems has an

important ethical aspect, and the complete solution of any one of them implies a social philosophy.

6. **Education.**—The educational system of any country, with its theories and practices, may be said to be an embodiment of that country's philosophy of life. Education, being the conscious and purposive device of the adults in society to train and develop the young, is the most conspicuous effort of the modern state or civilization not only to preserve and perpetuate itself, but to create and determine its future.

Education has many purposes. Among these aims is the desire to aid the young: (*a*) in their understanding, appreciation, and control of nature; (*b*) in understanding, developing, and controlling themselves as rational, self-determining beings; (*c*) in understanding, respecting, and appreciating the worth of their fellow men; and (*d*) in understanding and properly evaluating both the traditions and institutions of the past and present. Now it is the function of the special sciences to provide a clear, simple, and accurate descriptive account of the parts of the organic and inorganic world, including man and social institutions. The social sciences must also provide the means and methods by which life's aims and purposes are to be realized. But it remains for those disciplines—namely, philosophy and ethics—which view the world and life as a whole, to determine the values, aims, and purposes that *ought* to be pursued and realized.

The intimate relationship between philosophy on the one side and educational theory and practice on the other is clearly affirmed by eminent minds in the following statements: Plato, for example, advises that "the teacher should endeavor to direct the children's inclinations and pleasures by the amusements to their final aim in life."[15] W. T. Harris, the first commissioner of education in the United States, lays stress on educational aims when he says, "The statesman or the teacher knows practically when he knows the trend of the system he is to direct or manage.''[16] The moral aspect of education is pointed out by George H. Palmer in these strong words: ''So conditional on morality is the process of knowing, so inwrought is it in the very structure of the school, that a school might well be called an ethical instrument and its daily sessions hours for the manufacture of character.''[17] George T. Ladd places emphasis on the same point when he says: '' . . . The culminating function of the professional teacher is the making of a person, or self.''[18] And to the same effect are the words of John Finley, ''The school is adapted by the adult community as a vehicle for controlling values and ideals.''[19] A. N. Whitehead sums it up: ''Wanting the theory, instruction becomes aimless.''[20] Then Shakespeare's fine words also stress the value of personality:

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[15] "The Laws."

This above all: to thine own self be true,
And it must follow, as the night the day,
Thou canst not then be false to any man.

The special sciences, in providing a knowledge of what exists, what has existed, and what may exist, not only offer the means and methods by which ends are to be realized; they suggest the ends and the restricted conditions under which they may be realized. In other words, a complete separation of means and ends in life is impossible. Perhaps it is also impossible to completely separate the sciences or disciplines into descriptive and normative. However, the complete achievement of the praiseworthy aims mentioned above implies not only a vast amount of descriptive knowledge, material equipment, and clear insight into appropriate methods, it implies also that we are prepared to teach a conception of man and nature; it implies that we know something of the relative value and importance of the sciences, morals, religions, and the fine arts. In brief, it implies a complete philosophy of life—a world view and a life view. These are problems of philosophy and ethics.

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[16] Boone's ''Education in the United States,'' Preface, p. 6. (D. Appleton and Co., 1890.)

[17] ''The Teacher,'' p. 52. (Houghton Mifflin Co., 1908.)

[18] ''Teacher's Practical Philosophy,'' p. 134. (Funk and Wagnalls Co., 1911.)

[19] ''The School,'' p. 55.

[20] ''The Philosophical Basis of Education,'' p. 238.

II. Philosophy and Intellectual Interests not Defined as Sciences

Our purpose now is to discuss how philosophy is related to the types of experience found in the fields of morality, religion, and literature. We shall begin with a treatment of the relationship between philosophy and ethical concerns.

A. Philosophy and Morality

The natural sciences, because of their specifically descriptive interest, are indifferent to values. For example, botany is as much interested in giving an accurate account of a weed as of a useful plant; the psychologist, in describing abnormal and pathological mental phenomena as the normal and socially useful; the historian, in tracing out the events of a destructive war as recording the achievements during a period of peace. In the words of Professor Leighton, "The business of natural science is to consider everything *which occurs, whether in the physical world or in human nature, as an inevitable event in the endless march of physical causation. Its fundamental postulate, or working principle, is that of a thoroughgoing mathematical and physical determinism.*"[21] But, besides this realm of material things, events, and processes, there is the world of mind, in which aims, ends, and ideals are experienced. This is sometimes called the realm of moral, religious, and esthetic values. An exposition of the theory of values appears in a later chapter. Our present references to values involve merely the knowledge of them possessed by the average, intelligent individual.

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[21] The Field of Philosophy," p. 29. (D. Appleton and Co., 1923.)

The moral experience makes its appearance in the life of the normal child sometime between the ages of two and five years. It manifests itself as a feeling of duty or sense of ought, and, when more developed, it appears in the form of purposes, plans, choices, and ideals. Rooted and grounded in the inherited psychophysical dispositions and tendencies or instincts of the child, the moral consciousness grows and develops with the organism. What is felt to be a duty, right or wrong, the content of the moral experience, is a product largely of the individual's contact with the physical and social environment. The influences of parents in the home, teachers in the school, pictures and reading, are paramount. Conscience in its enlightened and highly individualized form is the finest fruit of the moral personality.

Ethics is the name of that part of philosophy which deals with the moral experience and moral values. J. S. Mackenzie defines it as "the science of the ideal in conduct."[22] Ethics takes many forms, as we shall notice later, but its basic problem is the definition of the good for selves in society. What are the highest values for human life, what ultimate ends should be sought because they give enduring satisfaction, what is the *summum bonum?*—these are but different ways of asking the one eternal question. Ethics is thus a normative inquiry; it seeks to establish a standard of conduct for individuals in social relationship. There are other normative studies; for example, medicine, and hygiene, both of which are concerned with the rules of health; architecture, which presents the rules to be observed in constructing a building; navigation, which deals with the aims and principles involved in managing ships; rhetoric, which discusses the rules for attaining persuasiveness and beauty of literary style; logic, the science of the principles and conditions of correct thinking. But ethics, perhaps, is the most important because it treats of the whole of individual and collective human life from the moral point of view. To the extent that the other normative disciplines are related to the moral experience, they are means and not ends.

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[22] "Manual of Ethics," p. 1. (Noble and Noble, 1925.)

While ethics as a branch of philosophy is distinct from the physical sciences, and even from the other social sciences, it is very much dependent upon them. Psychology, sociology, history and government, for example, record many facts and laws on individual and group conduct; hence ethics must draw heavily upon these sciences for its material. It has also much to learn from anthropology and ethnology, and even from the physical sciences. While each and all of the natural and social sciences supply valuable material for ethics, none of them nor all of them together answer the basic questions. In so far as they study man and tell us what he is, what he has been, what he has done, what his social relations and interests have been, what the physical world has been and is that constitutes his environment, they supply material. When the moral philosopher has mastered the vast store of material supplied by these special disciplines, including those studies which deal with man's experience of religion and art, he is reasonably well equipped to define the ethical ideal and indicate its practical bearing upon everyday life. A fuller preparation, of course, would involve an acquaintance with the facts of an historical and comparative study of values in the ancient and modern civilizations.

B. Philosophy and Religion

The relationship between philosophy and religion is not easy to state. In one sense religion offers a type of experience, like the ethical and the esthetic, to which philosophy goes for material in constructing its view of the world and life. From this point of view philosophy is more comprehensive in scope than religion. On the other hand, however, religion attempts to effect a more perfect unity between man and the world than does philosophy; in this sense philosophy and religion are equal in scope. Philosophy tries to effect a unified conception of the world, so that its meaning and value are clear to thought, but religion seeks to bring man into harmony and unity with the source of order and power in the world. In its developed form, religion posits God (or gods) as an object of faith and belief, and seeks by prayer, rites, ceremonies, and conduct to keep on friendly terms with him. In keeping with this view, religion is sometimes defined as "the serious and social attitude toward the Determiner of Destiny. . . ." "Religion is a feeling of dependence upon unseen powers which control our destiny, accompanied by a desire to come into friendly relations with them."[23]

Philosophy has an intellectual interest primarily; it is the love of knowledge and wisdom that is its chief motivation. Religion, on the other hand, takes a more practical, personal, and intimate attitude to the world and its resources of power; it seeks knowledge and insight in order to secure emotional peace and salvation. For the religious man fellowship and communion with God, harmony and unity with the Divine Will, yield a spiritual joy and contentment that makes other values pale into insignificance.[24]

In religious literature, both of the Christian and the non-Christian religions, one comes upon such ideas as: (1) the soul, its origin, nature and destiny; (2) the world, its origin, nature, and destiny; (3) God, his nature and relations to the world and man; (4) man and his relationship to nature; (5) science and religion, involving such questions as creation, evolution, the relationship of matter, life, mind, and value; (6) the relation between the Christian and the non-Christian religions, particularly on the questions of sacred literature, ethical teachings, and values.

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[23] J. B. Pratt, "The Religious Consciousness," p. 1. (The Macmillan Co., 1920.)

[24] See Shailer Matthews, "Contributions of Science to Religion," pp. 351–422 (D. Appleton and Co., 1924); Sherwood Eddy, "New Challenges to Faith," esp. pp. 47–49 (Richard R. Smith, Inc., 1926); A. N. Whitehead, "Science and the Modern World," Ch. XII.

All of these questions in one way or another are philosophical problems. Viewing as it does all questions in the light of the spirit and conclusions of the sciences, and taking a comprehensive intellectual attitude to all of the problems of life, philosophy is in a unique position to render service to religion. Religion is primarily an emotional and practical attitude to the totality of things. Accordingly it stands in need of the critical and intellectually constructive service of philosophy. Philosophy in the end must deal with the existence and nature of God. It must settle upon the evidences for the immortality of the soul. It must show that there is and can be no conflict between religion and science when both are properly understood. Its studies on the origin, nature and validity of knowledge will throw light upon the conflicting claims of sacred literatures.

But someone will ask: Is not philosophy as disastrous to religious belief as science? It is true that certain philosophies make no room logically for God and religious values. A thoroughgoing materialism is one of them. Skepticism and agnosticism discourage religious belief. To the views just mentioned, religion, with its beliefs and practices, appears as a vestige or hangover from the ignorance, fear, and superstition of primitive and savage society. Or, it may even be regarded as an imaginative creation of man's wishes, hopes, and fancies. It is true that all philosophizing is dangerous, but only in the sense that all serious thinking is dangerous and destructive of ungrounded beliefs. Knowledge, to be truly useful to man, must be rightly used. It is knowledge and truth that have made man free. Ignorance and blind faith keep men in slavery. In this day, however, we are quite committed to the pursuit of knowledge as the means of our physical and social salvation. A philosophy of life reflectively worked out is more or less inevitable in a scientific age. Such a course as this in philosophy is intended to aid the student in developing an outlook upon the world and life that will be intellectually respectable and defensible. A religious belief and practice which will not stand sober, thoughtful inspection needs the purging fire of philosophy. Once the renovation has taken place, the foundations of belief are likely to be laid deeper and firmer. The superstructure of faith and practice will be more permanent and satisfying than if laid upon questionable bases. A sane and intelligent religion, therefore, has no need to fear philosophy. Philosophy puts into the hands of religion the weapons it needs to fight its battles against its enemies.

Religion differs from philosophy in its method and spirit. To begin with, religion is largely a matter of tradition. In the primitive and even advanced stages of society, it is an affair of the group. The religious beliefs and practices in primitive groups are taken over and accepted almost without change by the young. In modern and contemporary life few children trained in a particular religion by their parents are found to depart from these beliefs and practices when they grow older. When there is any departure from childhood training, it takes place only under a considerable wrenching of the feelings, emotions, and sentiments. Religion is grounded deep in the *native* emotional and feeling dispositions of life. This aspect of human nature is earliest to become fixed in sentiments and habits, and it is the most reluctant to undergo variation and change.

Philosophy, on the other hand, is critical and reflective, even to the point of being skeptical. It is skeptical in the sense that every item of belief and practice must pass before the scrutinizing eye of reason. No traditionally honored belief or supposed truth is accepted merely because it is hoary with age, or because its origin is shrouded in mystery. What is accepted must accord with the facts of rationalized experience and systematized judgments. Philosophy is not only intellectual in its attitude, tending rather to restrain feeling and emotions and to criticize the sentiments, but it is individualistic. Individuals, not groups, philosophize and criticize beliefs. Thus it is that reforms are led by individuals—men and women who have dared to think and stand alone. Because religion possesses the characteristics just mentioned, it may be regarded as conservative and slow to change, while philosophy is radical and constructive.

In one further respect is philosophy closely related to the primary interest of religion. An historical and comparative study of the living and dead or decadent religions will show that the basic concern of religion is the conservation and enhancement of socially recognized values. George Galloway defines religion as "Man's faith in a power beyond himself whereby he seeks to satisfy emotional needs and gain stability of life, and which he expresses in acts of worship and service."[25] Harold Hoeffding says: "Religion is faith in the conservation of values." William K. Wright supports this point of view in the statement: "Religion is the endeavor to secure the conservation of socially recognized values through specific actions that are believed to evoke some agency different from the ordinary ego of the individual, or from other merely human beings, and that imply a feeling of dependence upon this agency."[26] Religion is essentially a faith in the ultimate goodness of the universe. It believes that somehow the deep ethical and spiritual yearnings of the human mind will be honored and satisfied. While truth and goodness may be crushed to earth for a time, religion believes they will rise again. Justice, friendship, sympathy, and love may appear at times to be vanquished, illusory, or futile, but religion believes they are the profoundest of realities and that they will ultimately triumph. Thus religion puts its faith in God as the conserver and guarantor of these values. Now philosophy is concerned with the status of values in the world. It is concerned with their ultimate destiny. All the philosophical inquiries—epistemology, cosmology, ontology, and axiology—are thoroughly involved in the problem of the status of values in the universe. Axiology more especially discusses values, but they present themselves in every field of philosophical thought.[27]

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[25] "The Philosophy of Religion," p. 194. (Charles Scribner's Sons, 1914.)

[26] "A Student's Philosophy of Religion," p. 47, original in italics. (By permission of The Macmillan Co., publishers.)

C. PHILOSOPHY AND GENERAL LITERATURE

The enduring literature of a people, whether poetry or prose, usually has a philosophical theme. It deals with such subjects as the origin and destiny of the soul; whether man is in the hands of a blind and insensible fate or of a benevolent providence; with the problem of evil and suffering—their origin, cause, and meaning; with the perennial human concern for truth, goodness, and beauty—their origin, nature, and prospect in the world; or with some basic political, economic, or social question. All religious literature, whether Christian or non-Christian, is permeated with philosophical questions. One cannot read the classics of either ancient or modern literature without encountering ideas of philosophical bearing. Homer, Æschylus, Sophocles, Euripides, Lucretius, Vergil, Omar Khayyám, Dante, Milton, Shakespeare, Coleridge, Wordsworth, Matthew Arnold, Browning, Tennyson, Shelley, Keats, Goethe, Schiller, Molière, Emerson, Whittier, and Whitman—these, to mention no others, are all philosophical poets. Such imaginative literature as plays, novels, and short stories, as well as magazine articles, often portray man in the trying complex social relationships of life with an implied criticism or defense of particular conditions, beliefs, and practices. Questions involving the nature of man, the world, and the values of life, are frequently treated in literature with great seriousness.[28]

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[27] The following is a joint statement upon the relations of science and religion prepared by a group of scientists, religious leaders, and men of affairs:

> We, the undersigned, deeply regret that in recent controversies there has been a tendency to present science and religion as irreconcilable and antagonistic domains of thought, for in fact they meet distinct human needs, and in the rounding out of human life they supplement rather than displace or oppose each other.
>
> The purpose of science is to develop, without prejudice or preconception of any kind, a knowledge of the facts, the laws, and the processes of nature. The even more important task of religion, on the other hand, is to develop the consciences, the ideals, and the aspirations of mankind. Each of these two activities represents a deep and vital function of the soul of man, and both are necessary for the life, the progress, and the happiness of the race.
>
> It is a sublime conception of God which is furnished by science and one wholly consonant with the highest ideals of religion, when it represents him as revealing himself through countless ages in the development of the earth as an abode for man and in the age-long inbreathing of life into its constituent matter, culminating in man, with his spiritual nature and all his God-like powers.

Signed by *Religious Leaders:* Bishop William Lawrence, Bishop William Thomas Manning, Bishop Joseph H. Johnson, Dr. Henry Van Dyke, Dr. James I. Vance, Dr. John D. Davis, President James Gore King McClure, President Clarence A. Barbour, President Ernest D. Burton, President William Lewis Poteat, President Henry Churchill King, Dr. Robert E. Brown, Bishop Francis John McConnell, Dr. Merle N. Smith, Dr. Peter Ainslie, Dr. Herbert L. Willett. *Scientists:* Charles D. Walcott, Henry Fairfield Osborn, Edwin Grant Conklin, James Rowland Angell, John Merle Coulter, Michael I. Pupin, William James Mayo, George David Birkhoff, Arthur A. Noyes, William Wallace Campbell, John J. Carty, Robert A. Millikan, William Henry Welch, John C. Merriam, Gano Lunn. *Men of Affairs:* Herbert Hoover, James John David, Elihu Root, David F. Houston, Frank O. Lowden, John Sharpe Williams, Rear Admiral William S. Simms, Harry Bates Thayer, Julius Kruttschnitt, Frank Vanderlip, Henry S. Prichett, William Allen White, Victor F. Lawson, John G. Shedd.—Quoted from Sherwood Eddy, "New Challenges to Faith," pp. 49–50. (Richard R. Smith, Inc., 1926.)

While it is true that general literature treats philosophical themes, the method and spirit of treatment is usually different from that of philosophy. Poetry, for example, is a condensed, vivid, concrete, and often dramatic statement of thought, commonly in metrical form. Philosophy, on the other hand, proceeds by well articulated steps of analysis and synthesis. Poetry presents its truths as flashes of insight, as intuitions presumed to be self-evident to a person whose feelings and imagination are aglow with sympathy and enthusiasm for the object. Philosophy is predominantly conceptual and ratiocinative, insisting that all assumption and presuppositions be clearly stated and that the argument be advanced step by step with scrupulous care. Poetry is synoptic and makes its appeal primarily to the feelings and the imagination, and in a secondary way to the whole personality. Philosophy is analytical and argumentative and makes its appeal to the intellect and the whole personality. Some philosophers combine the gifts of the poet and the philosopher; their philosophy, in consequence, is what might be called a conceptual poem. Plato is the outstanding example here. Henri Bergson and George Santayana possess this talent in a lesser degree. In its synthetic grasp of the totalities of the world and experience, poetry resembles the comprehensive conclusions of philosophy more than it resembles the conclusions of the sciences. This is true because the concepts of science are standardized and hold true within limitations, while in philosophy the working concepts are less standardized and the constructive imagination is allowed a wider and freer range.[29]

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[28] See Cicero, ''Oration for Archias''; Matthew Arnold, ''Sweetness and Light'' (Ch. I of ''Culture and Anarchy''); George Santayana, ''Three Philosophical Poets'' (Harvard University Press, 1910); R. B. Perry, ''Approach to Philosophy,'' Ch. II (Charles Scribner's Sons, 1905).

III. Philosophy and the Cultural Field as a Whole

A concluding word on the relationship of science, philosophy, and general literature may not be irrelevant. Science, with its inductive, empirical method and disinterested spirit, offers the most cosmopolitan form of literary expression. Scientific literature is least affected by race, nationality, and cultural setting. The sciences display the most impersonal literature which civilization has produced. On the other hand, poetry, and, for the most part, the rest of general literature, is most personal and most dependent upon racial and national peculiarities, as well as cultural setting. Human desires and aspirations, hopes and fears, loves and hates, joys and sorrows are most naturally and adequately expressed in the rhythm of poetry. Consequently, poetry and general literature are interpretative of life rather than scientifically critical of life. They may—in fact they often do—rise to a cosmopolitan plane of interest and express the universal passions, emotions, and feelings of man.

Philosophy, in its form and spirit, stands between science on the one side and poetry on the other. In the assumptions and conclusions of the sciences philosophy finds much of its material. It aims to be scientific, that is, critical and inductive in method as well as impartial and disinterested in spirit. It would also be cosmopolitan in its outlook; it would arrive at such conceptions of truth, goodness, and beauty as are universally acceptable and valid. But philosophy can hardly become as impersonal as science. This is because science offers an *intellectual* reaction to the world, while philosophy offers a reaction of the whole personality. Science can ignore values; philosophy must take account of them. Witness the philosophical writings of Plato, St. Augustine, St. Thomas Aquinas, Descartes, Spinoza, Leibnitz, Locke, Berkeley, Hume, Kant, Fichte, Hegel, Mill, Spencer, Wm. James, and Royce. All of them were men of striking personality, and they wrote out of cultural settings. Science marks off fields for intensive intellectual treatment and descriptive explanation. Philosophy is broader in its scope and more interpretative in the form of its explanations. Its generalizations are more comprehensive than those of a particular science. Philosophy is interested in the nature of man and of the cosmos and the situation of man in the cosmos. Philosophy thus offers both a criticism and an interpretation of life. In the words of Professor Ernest Albee: ''Science enables man to comprehend the world from without; literature helps us to appreciate the world from within; philosophy endeavors to prove that the world is one after all, in spite of the apparent antithesis of description and appreciation.''[30]

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[29] See A. N. Whitehead, "Science and the Modern World," Ch. V.

Now that we have considered the relation of philosophy to the sciences and to general literature, it may be well to ask: Is philosophy a science? Our answer is, in the main, affirmative. When we remember that the definition of science involves two aspects, namely, (1) method, and (2) the body of conclusions, and that the former is the more important, there is nothing to say but that philosophy is a science. It does not deal with concrete sense data so much as do the particular sciences. Its material is more conceptual—the assumptions and conclusions of the sciences together with principles drawn from the moral, religious, and esthetic experiences. But, in the end, it differs no more from any one of the sciences than the sciences differ among themselves. In method and spirit it is one with the sciences, except that it is rather more personal and interpretative. Its aim is to begin where the sciences leave off, taking the generalizations there arrived at, comparing, criticizing and organizing them into higher and more completely unified views of the world and life. Professor Paulsen is not far from the truth when he says: "Philosophy cannot be separated from the sciences; it is simply *the sum total of all scientific knowledge.* All sciences are parts of a uniform system, of a *universitas scientiarum,* the subject matter of which is the whole of reality. This never-completed system, which the ages are building, is philosophy."[31] Philosophy is thus the coördinator and articulator of the specialized bodies of knowledge attempting to give a world view and a life view. "It brings to this task," as Professor Whitehead says, "not only the evidence of the separate sciences, but also its own appeal to concrete experience. It confronts the sciences with concrete fact."[32] It can truly be said and without presumption, that philosophy is the science of sciences.

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[30] *Phil. Rev.*, Vol. 27, p. 355. See entire article on ''Philosophy and Literature,'' pp. 343 ff. Also *Journal of Speculative Philosophy*, Vol. 14, pp. 421–454, ''The Philosophical Element in Shelley.''

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[31] "Introduction to Philosophy," p. 19. (Henry Holt and Co., 1895.)

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PART TWO

THE PRINCIPLES OF EPISTEMOLOGY AND THE CHARACTER OF EXPERIENCE

Chapter V

THE ORIGIN OF KNOWLEDGE

NOW that we have defined philosophy and have indicated its scope, methods, and values, we are ready to discuss one of the fields in which philosophy displays its interest and manifests its technique. The sphere with which we are to be concerned in the present part of our survey of philosophy is epistemology, or the theory of knowledge. The philosopher emphasizes this feature of his *total* pursuit, because, after all, his examination of reality as a whole would be foolish and futile unless he could convince himself and others that it is legitimate for human beings to seek an understanding of the universe. Epistemology tries to show that our speculations regarding such baffling questions as space, time, soul, progress, truth, deity, and so on, are not necessarily mere guesses, but may result in valid interpretations, which reality itself provokes and sustains.

There is a danger that philosophers will pay too much attention to epistemology and so specialize on the knowing process that they will tend to interpret reality exclusively as mental. This fault has been a persistent error in traditional philosophy of the idealistic type. No philosophy can neglect the knowing event; it is a very significant affair, perhaps the most valuable function in all the occurrences in the world; but it is, nevertheless, only one of many processes that go on in our world. The propensity to assert that the universe is the content of knowledge rather than a reality that exists in its own right is due to the fact that the knowledge situation is so intimate and prominent in the lives of human beings. Human beings, we must confess, are prone to overstress the happenings which peculiarly relate to themselves.

1. **The objectives of epistemological inquiry.**—Four important problems have concerned the thinker in his attempt to interpret and evaluate knowledge. *The first problem is that of the origin of knowledge.* The philosopher, in treating this question, is concerned with the query as to whether knowledge is inherent or acquired. In discussing this problem he is led to examine the psychological means by which knowledge is obtained and employed. *The second problem has to do with the nature of knowledge.* The epistemologist, in working on this task, studies the content of our knowledge of the entities which make up reality. The description of sensation, perception, conception, judgment, postulation, and other components of experience constitutes the main interest in this aspect of the epistemological enterprise. *The third concern of epistemology deals with the relationship of knowledge to reality, or, in short, with the relevancy of knowledge.* The epistemologist, in this phase of his study, treats such questions as whether the object known is physical, or mental, or both—that is, whether the object known is within consciousness or external to it. In experience do we actually know the object directly, or do we know a mental image or copy of the real object?—questions of this sort engage the epistemologist in this part of his investigation. *The fourth epistemological problem has to do with the criteria of knowledge.* In attending to this question the epistemologist presents the various tests which thinkers have argued to be the standards distinguishing the true from the false. The epistemologist also criticizes the different criteria of truth which have been used throughout the history of philosophy. The four objectives of epistemology are interdependent. One cannot discuss one of the four questions without sooner or later entering into an examination of the other three. As we have stated already, it is not necessary or desirable to affirm that the real has the same characteristics as the

known, but we cannot deny the fact that epistemology involves directly a greater number of philosophical issues than any one of the disciplines of philosophy. To deal with the four epistemological problems is to enter seriously into the considerations of psychology, ontology, and axiology. The emphasis upon epistemology throughout the history of philosophy has not been due to a desire to support idealism, as anti-idealistic thinkers have insisted, but has been the result of the aim to attain a theory which will comprehensively and coherently embrace all factors of experience. That epistemology is the philosophical discipline which most adequately contains all the interests of a complete intellectual outlook is a conclusion arrived at by reflection and not by sentiment. That epistemology involves problems which extend into psychology, ontology, and axiology, and that the various epistemological problems are so reciprocally related, are tokens of epistemology's right to be considered as crucially characteristic of the best kind of philosophical theory.

The four epistemological problems, indicated above, may be briefly stated as dealing respectively with the *origin, nature, relevancy,* and *validity* of knowledge. A chapter will be given to the consideration of each of these epistemological issues. The question of the origin of knowledge is our present topic for discussion. Our immediate interest is to find out what the problem of the origin of knowledge implies.

2. **The meaning of the problem of the origin of knowledge.**—In regard to this question, there are three issues in which we are not now interested. In the first place, the problem of the origin of knowledge is not concerned with the instrumental conditions of knowledge. In other words, we are not now interested in the development of the *knower* but in the genesis of the *known.* The question as to whether the causal agency of the knowing event is physical, metaphysical, or both physical and metaphysical is treated later in our examination of the nature of the self. In the

second place, in dealing with the origin of knowledge we are not concerned with the time when mind appeared in the process of evolution. Whether mind was the primordial fact of reality, or a continuous feature in the history of the world, or a late arrival in the cosmic process is a question which we shall discuss in presenting theories of evolution. In the third place, we are not now interested in asking how God arrives at his knowledge. Whether the experience of deity is eternally realized and perfect or enlarging and improving is a matter which we study in our inquiries concerning the nature of God.

The aim of the present chapter is to examine the sources of human knowledge that immediately precede the attainment of knowledge. The remote conditions of knowledge, to be explained only in terms of the evolution of nature or the character of God, are of metaphysical rather than epistemological interest. In other words, just now we are concerned with the psychological, and not the cosmological or theological antecedents of knowledge. How does man acquire knowledge? Is knowledge derived by experience, or is it innate, or is it both derived and innate? Do we receive any kind of knowledge by some kind of immediate deliverance without effort on our part, or must all knowledge be attained by a slow and tedious learning process? These are the questions which represent the problem of the origin of knowledge. And the problem is not merely an academic inquiry. Whether religion is to be sanctioned by its supernatural authority or by utilitarian serviceableness, whether aristocracy or democracy is the more advisable political system, whether there should be absolute or relative ethical standards—these and other questions of import can never be solved until we have some clear and convincing conceptions of the origins of human knowledge. Men behave like human beings because they believe like human beings, and, if we do not understand the conditions, character, and consequences of their beliefs, we cannot hope to explain the manifold implications of their conduct. To appreciate the nature of human beliefs is to comprehend the whole gamut of man's intellectual reactions to his world. We cannot cover in one chapter the entire range of knowledge processes through which the individual passes in the acquisition of the ideals and convictions which govern his responses in civilized community life, but we can indicate the main stages in his psychological genesis.

3. **Stages in the genesis of knowledge.**—The three most important occasions in the development of the knowing process, presented in the order of their appearance and worth, are: (1) *the responses arising out of the original nature of man;* (2) *the information received from other members of the social group in which the individual lives;* (3) *the ideational content which a person attains in the productive activities of his own intellectual life.* We may call these three epistemological methods the physical, the social, and the cultural ways of acquiring knowledge. The divisions correspond to the subjective, objective, and absolute minds in Hegel's philosophy of mind. Let us study, in turn, these three types of knowledge situations.

I. The Epistemological Significance of Man's Native Responses

An investigation of the steps in the development of human knowledge must include an examination of man's inherited psychological equipment. The unlearned responses which an infant makes have, of course, little or no philosophical significance in themselves. They lack all the distinctive marks of synoptic and speculative reactions to the environment. But, if intrinsically they have small philosophical usefulness, extrinsically they furnish the fundamental conditions of man's most important philosophical activities. The nature of an adult's philosophy of life is determined largely by the use which he makes in his earlier years of his native psychological endowment. The treating of the higher mental life as a realization of inherited biological tendencies has affected psychological theory in four ways. It has narrowed the gulf between primitive and civilized man. The cultural differences between races have come to be viewed largely as differences of opportunity to express and develop innate capacities. The biological characteristics of modern and ancient man being without significant dissimilarities, environmental factors are given increased emphasis as determining conditions of the intellectual variations between peoples. In the second place, great significance has been ascribed to research in animal psychology and child psychology, the non-logical behavior of the lower animals and young children being taken as significant of procedures in the learning process of human adults. In the third place, the connecting of intellectual life with the preintellectual bodily activities has supported the psychological theory, propounded and popularized by Sigmund Freud, that the rational behavior is determined by the sort of control we give to the nonrational, unconscious strivings and impulses of our nature. In the fourth place, the present-day tendency to destroy the former sharp line of demarcation between the mental and submental levels, instead of despoiling mind of its nobility, has enhanced the glory of the bodily functions. No longer does the custom of calling the biological appetites evil have serious influence, even among the uncultured.

The two great categories of human response.—Various pairs of terms are used to differentiate the responses of man which are provided by nature from those which he learns by experience. *Native* and *acquired, unlearned* and *learned, instinct* (using "instinct" in a very broad sense) and *habit, original nature* and *environment, biophysical* and *biosocial* are some of the sets of terms used by various psychologists to distinguish the two types of human behavior. No hard and fast lines can be drawn between the two groups. Many forms of physiological organization, observable at birth and therefore called innate, may not be present at all in the fertilized ovum, but are structures developed because of stimulating conditions in the stage of intrauterine growth. Again, many kinds of behavior which seem to be acquired are cases of inherited tendency, for which the appropriate physiological processes are comparatively late in developing. Furthermore, it must be admitted, without any desire to deny a distinction between the material and the mental aspects of experience, that when the genesis of knowledge is considered in either the material or the mental side alone, the acquired responses differ from the inherited only in complexity. Indeed, some psychologists are so averse to any distinction between the native and the learned that they make the latter completely dependent upon the former; while other psychologists, likewise concerned to reduce the two types of behavior to one kind, interpret all sorts of human activity, even that appearing at birth, as learned. Until we have more statistical and experimental knowledge than we now possess, we must, both for theoretical and practical purposes, separate the responses of man into the two divisions, *inherited* and *acquired*. What are the fundamental forms of activity which underlie the social and cultural performances of man? According to Professor Edward L. Thorndike, the unlearned tendencies are reflexes, instincts, and inborn capacities.[1] We shall discuss the three unlearned tendencies which are the most inclusive and the most important; namely, *instincts, emotions,* and *capacities.*

A. THE NATURE OF INSTINCTS

1. **The relation of instincts to reflexes.**—There is probably no term concerning which psychologists differ so greatly as the term *instinct*. It is doubtful whether two psychologists can be found who agree with respect to the definition and classification of instincts. And, when we

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[1] "Educational Psychology, Briefer Course," Ch. I (Teachers College, Columbia University, 1925); also "The Original Nature of Man," pp. 1–7 (Teachers College, Columbia University, 1913).

consider the use of the word in ethical, esthetic, and religious literature, the variation in its usage is so pronounced as to be staggering. The term has been used to embrace such different things as spitting, blushing, patriotism, desire for immortality, and sense of justice. There is one characteristic of instincts, however, which is acknowledged by most psychologists; namely, their close relation to reflex behavior. Scientific discussions of instincts generally regard them as combinations of reflex acts. Now what is meant by a reflex? According to Professor Thorndike, when there is "a very definite and uniform response to a very simple sensory situation and the response is hard to modify and is also very strong, so that it is almost inevitable, the connection or response to which it leads is called a reflex."[2] Next to tropisms—which are the most simple movements of approach or withdrawal which an organism makes in its reaction to a stimulus—reflexes are the least complicated of all human activities, being practically mechanical in their performance and serving functionally as the counterparts of the structural patterns, called the reflex arcs. The reflex arc is the predetermined, native process involving the conduction of nerve impulses over peripheral receptor, motor, and interconnecting nerve cells, or neurones. The reflex arc is the inherited pathway over which nervous impulses pass from sense organs to muscles. The association cells of the reflex system may be in the cerebral cortex, or in lower centers, as the spinal cord, or the medulla. Examples of reflexes are the knee-jerk, swallowing, coughing, contraction of pupil of eye in strong light, winking, and grasping. There is no such activity as a pure reflex, because any reflex movement causes reactions generally throughout the body, producing behavior in many inherited structures other than the neural.

The connection between reflexes and instincts lies in the fact that the latter may be considered as combinations of the former. An instinct is an inherited system of responses, the elements of which are reflex arcs. The very complexity of the instinct accounts for its differences from a reflex. Instincts can function in more complicated situations than reflexes; their form of response is more varied than the uniform type of reaction manifest in reflexive behavior; they are more modifiable than reflexes.[3] Usually an instinctive act is accompanied by a much greater amount of consciousness than a reflex. In many reflexes, consciousness is totally absent. Both forms of activity assist in the biological survival of the individual, but the biological utility of instincts is considerably more indicative of a teleological, or purposive, aspect to nature's workings. The difference between a reflex and an instinct is illustrated in the difference between the grasping *reflex* employed by a bird in roosting upon a branch and the nest-building *instinct* of the bird.

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[2] "Educational Psychology, Briefer Course," p. 4.

2. **The classification of instincts.**—Professor William McDougall has given a very serviceable conception of instinct in defining it as "an inherited or innate psychophysical disposition which determines its possessor to perceive, and to pay attention to, objects of a certain class, to experience an emotional excitement of a particular quality upon perceiving such an object and to act in regard to it in a particular manner, or, at least, to experience an impulse to such action." [4] On the basis of this definition, McDougall enumerates the following instincts: flight, repulsion, curiosity, pugnacity, self-abasement, self-assertion, and the parental instinct, with the corresponding respective emotions of fear, disgust, wonder, anger, subjection, elation, and the tender emotion. To these seven instincts he adds four others, which possess less well-defined emotional associations: reproduction, gregariousness, acquisition, and construction. The psychoanalysists have reduced the number of instincts to two or three, as sex, hunger, and gregariousness, and the behaviorists have

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[3] See Thorndike, "Educational Psychology, Briefer Course," p. 4.

[4] "An Introduction to Social Psychology," p. 29. (John W. Luce and Co., 1927.)

tended to deny the reality of instincts altogether, but the thoroughgoing examination of instincts and theories of instincts made by Professor L. L. Bernard supports the theory that there are hundreds or even thousands of these inherited mechanisms.[5]

Those who stress the learned and acquired phases of instinct are likely to believe that the original instinctive tendencies are few in number; those who minimize the presence of habit in instinctive behavior and practically identify instincts with reflexes are likely to hold that instincts are multitudinous. The way out of the difficulty concerning the number of instincts is to cease thinking of instincts in terms of the reflex organizations upon which they are based, or in terms of the habit patterns into which they are modified and extended. Instincts must be considered as functions of the organism, rather than as structures. Instinct is ''the energy of the animal organism; an impulsion or drive. More than this, it is this energy or drive *working through organs of high specialization toward the satisfaction of specific organic needs, and without the influence of learning.*''[6] Professor Kurt Koffka also points out the dynamic character of instinctive behavior. To quote, ''While reflexes are typically 'passive' modes of behavior, which depend upon the fact that some stimulation has taken place, instinctive behavior is, by contrast, significantly 'active' in its search for stimuli. The bird *seeks* the material for its nest, and the predatory animal *stalks* its game.''[7] It is this conational aspect of instinctive activity which Professor McDougall endorses in his ''hormic'' theory of animal and human behavior, the term ''hormic'' coming from the Greek ὁρμή, which means a vital impulse or urge to action.[8] ''Take away these instinctive dispositions with their powerful impulses,'' McDougall writes in another treatise, ''and the organism would become incapable of activity of any kind; it would lie inert and motionless like a wonderful clockwork whose mainspring had been removed or a steam engine whose fires had been withdrawn. These impulses are the mental forces that maintain and shape all the life of individuals and societies, and in them we are confronted with the central mystery of life and mind and will.''[9]

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[5] See ''Instinct,'' p. 524. (Henry Holt and Co., 1924.)

[6] Professor R. H. Gault and Professor D. T. Howard, ''Outlines of General Psychology,'' p. 341. (Longmans, Green and Co., 1925.)

[7] ''The Growth of the Mind'' (translated by R. M. Ogden), p. 100. (Harcourt, Brace and Co., 1924.)

[8] ''Outline of Psychology,'' p. 71. (Charles Scribner's Sons, 1923.)

When instincts are classified according to the great organic needs which they satisfy, many movements are observed to be auxiliary and constituent responses for a few outstanding instinctive systems. These major instinctive activities may be divided into the self-preservative tendencies, including such behaviors as feeding, fighting, and crying; the parental tendencies, embracing such responses as mating, feeding the offspring, and protecting the young; and the social tendencies, involving such impulses as gregariousness, vocalization, and rivalry. Each of these three sets is basic to some of the noblest of human attitudes, the self-preservative propensity manifesting itself in the moral virtue of self-respect, the parental instinct emerging in the form of mother love, and the social proclivity effecting such excellent qualities as loyalty to humanity and fellowship with God. Not only are instincts valuable as the foundations of cultural activities, but they suggest, in their elemental dynamic form, the voluntaristic character of reality itself. It is only through an understanding of man's instinctive life that we can appreciate the philosophies of such thinkers as Schopenhauer and Bergson, who stress the aspects of struggle and striving in the universe.

B. The Nature of Emotions

1. The biological conditions of emotion.—Definition and classification in the case of emotions are no less difficult than in the case of instincts. We do have, however, more definite knowledge of the emotions than of the instincts, because emotional experiences have qualitative peculiarities recognizable by the most primitive of men. We all know when we are angry, or afraid, or when we are in love. Emotions seem to have a subjective and personal character possessed by no other human behavior. Sensory experience and instinctive activity have an objective reference to situations outside the self; they not only originate, but they also conclude in some relation to the external world. Emotions, on the other hand, although they are caused by stimulations from without, "find their goal within the body. In emotion, action ends with facial expression or diffuse organic responses."[10] As Professor Robert S. Woodworth asserts, "an emotion is a conscious stirred-up state of the organism."[11] Or, to use the words of Professor John B. Watson, "an emotion is an hereditary 'pattern-reaction' involving profound changes of the bodily mechanism as a whole, but particularly of the visceral and glandular systems."[12] In an emotional state the physiological responses include such activities as increased beating of the heart; stopping of the digestive movements; strengthening of the breathing motions; kinesthetic sensations from the movements of the large muscles of the body and from the muscles of the face; organic sensations from the visceral activities; secretion of the duct glands, as tears, sweat, saliva; secretions of the ductless glands, as the thyroid and adrenal solutions. Professor William James considered these bodily activities and their correlative sensations the constituent causes of the emotional states. If the sensations resulting from sudden stimulation could be inhibited, we should not experience anger, rage, fear, and so on. This theory of the emotions is called the James-Lange theory, because a Danish psychologist by the name of Carl Lange, without knowledge of James's work, put forth the same explanation. The James-Lange theory of emotions is based upon the doctrine that the feelings present in an emotion-arousing situation are due, not to the arousal of qualitatively intrinsic contents or processes, called emotions, but to the sensations of bodily movement in joints and muscles, and more particularly to the sensations which result from the disturbances in visceral and glandular organs. James, especially, emphasized sensations resulting from the disarrangements and reactions of autonomic, circulatory, digestive, and respiratory systems.

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[9] ''An Introduction to Social Psychology,'' p. 44. (John W. Luce & Co.)

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[10] Professor W. B. Pillsbury, "The Essentials of Psychology," p. 304. (The Macmillan Co., 1920.)

[11] "Psychology," p. 119. (Henry Holt and Co., 1921.)

[12] "Psychology from the Standpoint of a Behaviorist," p. 195. (J. B. Lippincott Co., 1924.)

The theory requires the presence of a perceptive stimulus. The bodily reactions resulting from the perception produce sensations of movement which *are* the emotions. According to the James-Lange theory we do not cry because we are sad; we do not laugh because we are happy. We are sad because we cry; we are happy because we laugh. James cites numerous examples to bear out this thesis; for example, the painful fatigue of actors and actresses after playing emotional parts, and the ceasing of emotional states with the stoppage of certain bodily movements by voluntary attention, as in counting ten during anger.

This theory has been criticized on the grounds that it stresses too greatly the perceptive features in emotional reactions. Professor Stout, an exponent of this criticism, has pointed out that it is not merely the sight of a bear which arouses the fear, but also reasoned, though rapid, recognition that the bear will interfere with our well-being. We are not afraid of bears in cages at a zoo. We would be frightened at a bear in a field or forest because the whole situation would be involved—our impulse toward self-preservation and self-defense, as well as perception of a dangerous animal.

Criticism has been made of the theory also, not only because perception brings about recognition of an instinct-inhibiting situation, but because emotions are often aroused by *ideas* gaining foreground of consciousness. We become angry at the stupidity of others and we are afraid of people whose theories of life are brutal and vulgar. Such emotions can hardly be due, as James suggests, to external perceptions as stimuli. The James-Lange theory has also been criticized on the grounds that the same emotion may result from different bodily reactions. We may be afraid in situations where our faces become flushed and our movements are manifold; the same sort of emotion may result, however, when our faces are white and we are unable to move. This criticism arises from false analysis. The fundamental organic movements are the same in the two cases. The critic is wrong in considering only the peripheral movements. The James-Lange theory has been opposed again on the count that emotions arise in situations where anesthetics have made sensations of bodily movements impossible. This criticism overlooks the rôle of memory in retaining sensations of past experiences of movement. Again, the biological psychologists, Sherrington, Cannon, Watson, Mayer, and Weiss, have attacked the James-Lange theory by pointing out that more important than kinesthetic reactions are the secretions from endocrine glands, especially the secretion of adrenin, a substance which, by removing fatigue products and increasing the blood pressure, aids the body in meeting the exigencies of an emotional situation.

2. **The classification of the emotions.**—There are three important ways of classifying emotions: (1) on the basis of their affective character; (2) with respect to their temporal persistence; (3) according to their complexity. To classify emotions from the standpoint of their affective nature is to divide them on the basis of their feeling tone, that is, on the ground of their being pleasant or unpleasant. "The opposition of affective quality affords a true psychological basis for classification, though it does not

carry us very far. It is responsible for the triads of emotive terms that we find in the dictionaries: joy, composure, sorrow; like, unconcern, dislike; sympathy, apathy, antipathy; attraction, insensibility, repulsion.''[13] When complexity is taken as the principle of division, according to Professor F. H. Allport, ''The principal emotions having an *unpleasant* feeling element are disgust, fear, rage, grief, and the somewhat emotional quality of intense bodily pain. Pain and disgust are relatively simple conditions, involving little specialized somatic activity. The chief emotions characterized by *pleasant* affectivity are elation, mirth, and love, both of the conjugal and consanguineal sort.''[14] The classification of emotions according to their time element indicates that ''emotions fall into two great groups according as the situations that arouse them are immediately insistent, or reach a climax of emotional appeal only in course of time. Joy and sorrow may be taken as typical of the former group; they are emotions that may be set up, for instance, by the receipt of a telegram. Hope and fear may be taken as typical of the second group; it may be many days before we venture to hope for the recovery of a friend from a serious illness or operation, or before we let ourselves fear that something has happened to the acquaintance from whom no news has come.''[15] Emotions are grouped into primary and secondary. Primary emotions are those which are the subjective aspects of instinctive behaviors. As we have already observed, Professor William McDougall treats the fundamental instincts as possessing concomitant emotional excitements. Secondary emotions are complex emotions formed by the blending of two or more primary emotions. ''An example of compound emotion is the blend of tenderness and amusement awakened in the friendly adult by the actions of a little child. Hate is perhaps a compound of anger and fear, and pity a compound of grief and tenderness.''[16] ''Other emotional qualities of similar complex nature are denoted by such names as contempt, loathing, horror, awe, admiration, reverence, gratitude, reproach, envy, resentment, vengeful emotion, embarrassment, shame, jealousy, and many others.''[17] When the complexes of emotions become permanent systems of experience, determining their possessor to act in a very definite way to specific situations, they attain the status of sentiments. According to Professor McDougall, the main sentiments are love, hate, and respect.[18] This author suggests that sentiments may be classified into three groups according to the nature of their objects; namely, the concrete particular, the concrete general, and the abstract, and they may be illustrated in the sentiment of love for a child, of love for children in general, of love for virtue or justice.[19]

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[13] Professor E. B. Titchener, ''A Textbook in Psychology'' (1910), p. 492. (By permission of The Macmillan Co., publishers.)

[14] ''Social Psychology'' (1924), p. 86. (By permission of and arrangement with Houghton Mifflin Co.)

[15] Titchener, ''A Textbook in Psychology,'' p. 491. (By permission of The Macmillan Co., publishers.)

3. **The function of the emotions.**—We cannot enter into a discussion of the biological value of emotions. Whether they represent chaotic responses when the usual routine of the organism is thwarted and thus are indicative of a deplorable waste of bodily energy, or whether they are adaptive responses, giving to man increased power to meet unexpected problems is an issue concerning which the psychologists themselves are now in disagreement. It hardly seems likely that the time will ever come when there will be no situations to provoke in man the fundamental emotional responses of love, anger, and fear. In the direction and discipline of these prime forces, rather than in their eradication, the hope of humanity must lie. A life without emotional excitement would certainly be drab and dull.

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[16] Professor R. S. Woodworth, ''Psychology,'' p. 135. (Henry Holt and Co.)

[17] McDougall, ''Outline of Psychology,'' p. 332. (Charles Scribner's Sons, 1923.)

[18] ''An Introduction to Social Psychology,'' Ch. V, VI.

[19] *Ibid.*, p. 162.

The philosophical consequences of the emotional life of man include the following: In the first place, a man's philosophy is frequently a reflection of his temperament, and temperament is the direct outcome of the groups of emotional reactions, either innate or acquired, which persistently dominate one's thoughts and deeds. An individual's point of view toward humanity, nature, or God is all too often an irrational and unimpeded expression of his phlegmatic, sanguine, melancholic, or choleric nature. In the second place, the pronouncements of one of the main branches of philosophy—namely, esthetics—are greatly affected by the emotional reactions of man. Beauty, order, symmetry, sublimity, and so on, have no meaning or worth to the cold, calculating, passionless intellectualist. In the third place, friendship, patriotism, family affection, reverence for God, justice, and other morally significant sentiments are developments out of the primary emotions. Without these original emotions, as without the original instincts, ethical, religious, and social life would be impossible. Again, ethics depends greatly upon the emotions because the famous end of morality, happiness, involves directly the affective elements of emotion, namely, pleasure and pain. In the fourth place, the emotions, subjective as they are, are related to external reality. An objective entity which is but cognitively known is not truly known. The mystic and the lover do not find by their peculiar methods the entire truth, but the heart does discover features of the real which the scientifically and practically-minded never dream are present.

C. The Nature of Capacities

In addition to the specific instincts and emotions as features of man's native endowment are general or non-specific innate tendencies. Using the terminology of Professor E. L. Thorndike, we are calling these indefinite, unlearned potentialities *capacities*. Capacities are not separated from instincts by great gaps either of structure or function, but the former type of original activity does include a good deal more of learned experience than the latter kind of innate tendency. Furthermore, instincts may be aroused by stimuli of purely physical or physiological nature, whereas capacities are excited only when the provoking situation involves other human beings, or objects having the social import of human beings. We shall enumerate and discuss four tendencies as being capacities; namely, *suggestion, imitation, sympathy, play.* Other dispositions, often termed capacities, as, for example, sense of duty, sensitiveness to religious objects, self-respect, love of country, are more appropriately classed as sentiments. Capacities are the unorganized, irrational urges, which produce rather than possess the permanent, system-like character of sentiments. Capacities may appear in young children, and even occasionally in animals; sentiments require maturity of emotional and intellectual life.

1. **Suggestion.**—This term is defined by Professor McDougall as a "process of communication resulting in the acceptance with conviction of the communicated proposition in the absence of logically adequate grounds for its acceptance."[20] As Professor McDougall points out, the proposition need not be stated in formal written or spoken language; a mere gesture or exclamation can give the suggestive stimulus. Professor McDougall states the four kinds of conditions to which the greater degrees of suggestibility are due: "(1) abnormal states of the brain, of which the relative dissociation obtaining in hysteria, hypnosis, normal sleep, and fatigue is the most important; (2) deficiency of knowledge or convictions relating to the topic in regard to which the suggestion is made, and imperfect organization of knowledge; (3) the impressive character of the source from which the suggested proposition is communicated; (4) peculiarities of the character and native disposition of the subject."[21] Professor F. H.

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[20] "An Introduction to Social Psychology," p. 97.

Allport discusses the three ways in which suggestion is concerned with the control of bodily attitudes. "First, it serves to build up or prepare the setting for a definite response when the releasing signal is given. Secondly, it may serve as the signal (social stimulus) which releases the attitude already established. And thirdly, suggestion may augment the released response as it is being carried out."[22] Professor Allport points out that "in the old-fashioned religious revival we find all three effects of suggestion upon attitude and response. First, through the preaching of 'hellfire' and 'conviction of sin' the attitude of penitence is built up. Secondly, this setting is released by the invitation-hymn and the call to come forward. And thirdly, the acts bespeaking self-surrender and the cries of religious ecstasy from others increase the ardor of the emotional reaction of each convert."[23]

The philosopher has deplored the presence of suggestion in the development of human rationality. He has emphasized the merit of individual, unbiased reflection as the supreme mark of philosophical thought. Suggestion, however, can play a very valuable rôle in philosophy. Placing himself in a position to receive the suggestions of the great philosophers, the young student of philosophy can, without sacrificing his own intellectual integrity, obtain an enthusiasm for the personalities and principles of world-famous thinkers, while learning at the same time methods of imparting knowledge which will enable him to submit his theories to the sphere of social usefulness and criticism.

2. **Imitation.**—Imitation may be regarded as the carrying out of suggestion. When we not only accept the idea suggested by another, but also carry out the movements which the idea causes him to perform, we are practicing

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[21] "An Introduction to Social Psychology," p. 98. (John W. Luce & Co.)

[22] "Social Psychology," p. 245. (By permission of and arrangement with Houghton Mifflin Co.)

[23] *Ibid.*, p. 248. (By permission of and arrangement with Houghton Mifflin Co.)

imitation. Gabriel Tarde, in *"Les Lois de l'Imitation,"* uses *imitation* as a term to include suggestion and sympathy and presents it as the most important factor in the social process.

Professor McDougall outlines five different kinds of imitation. First, when an individual copies the bodily movements of another because of a bond of sympathy between them. "Thus, when a child responds to a smile with a smile, when he cries on hearing another child cry, or when he runs to hide himself on seeing other children running frightened to shelter, he may be said to be imitating the actions of others."[24] Secondly, there are instances of imitation which are ideomotor actions. "In all these cases the imitative movement seems to be due to the fact that the visual representation of the movement of another is apt to evoke the representation of a similar movement of one's own body, which, like all motor representations, tends to realize itself immediately in movement."[25] Thirdly, imitation is also present in cases in which we deliberately take admired persons as our models and try to copy their actions. Fourthly, in this type of imitation the imitator is interested in producing the same result as that achieved by the imitated, but the actions carried out may be somewhat different in the two individuals. "For example, a child observes an elder person throw a piece of paper on the fire; then when on a later occasion the child finds himself in the presence of fire and paper, he is very apt to imitate the action; he produces a similar effect, though he may do so by means of a very different combination of movements."[26] Fifthly, this kind of imitation occurs in very young children when they copy simple movements of others without consciously experiencing in the process any emotional or intellectual elements, as for example, putting out the tongue.

Professors Thorndike, Allport, and Watson do not believe that the repetition in one individual of movements carried on by another is often due to an innate tendency to imitate. The copying is due to learning or to uniformity in stimulus-response mechanism. Whether the similarities in the actions of the members of the human race are the result of a native capacity of copying, or whether they occur because human beings are concerned to realize identical ends and must, therefore, employ like movements, the fact remains that upon the similarities the perpetuation of society depends. The philosopher is not concerned with the psychological explanation of imitation, but, as one who, practically as well as theoretically, is interested in establishing a universal community, he finds in imitation a valuable process for the extending of the principles and practices of general good will. Explain it as you will, without imitation the ethical excellency which results because men seek to emulate their moral heroes, and esthetic enlightenment which results because men aspire to reproduce in music, painting, sculpture, or the dance the beauties of nature would be impossible.

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[24] "An Introduction to Social Psychology," p. 104. (John W. Luce & Co.)
[25] *Ibid.*, p. 105.
[26] *Ibid.*, p. 106.

3. Sympathy.—According to Professor McDougall, "the fundamental and primitive form of sympathy is exactly what the word implies, a suffering with, the experiencing of any feeling or emotion when and because we observe in other persons or creatures the expression of that feeling or emotion."[27] In its most rudimentary form, sympathy is manifest as in the common feelings which run through a flock or herd of animals when they are suddenly frightened. The animals run, stop and cry all at the same time. Infectious laughter or weeping is a form of primitive sympathy in human beings. Higher forms of sympathy are instances of feeling another's joy, sorrow, fear, anger, or hope. A still higher form of sympathy is necessary before the capacity results in socially beneficial actions. Sympathy may be a type of superficial sentimentality. Before sympathy can become useful as a force

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[27] "An Introduction to Social Psychology," p. 92. (John W. Luce & Co.)

making for altruistic endeavor it must pass beyond the state of mere organic fellow-feeling. Sympathy makes for unity among men, but before it stimulates to heroic unselfish service we must supplement it with intellectual imagination. We must be able imaginatively to feel the other's pain or pleasure with the intensity with which he feels it, before we shall be incited to abolish or to continue the cause of his feelings. We must be able to imagine the effect of an individual's suffering upon the general happiness, before we shall become concerned to come to his aid. Unless we appeal to enlightened self-interest or unless we are motivated by an exacting sense of duty, sympathy for another will not find expression in altruistic action. Whether sympathy is a help or a hindrance in an intellectual apprehension of an object is a debatable question. The best way to know our world would be to combine the approaches of impersonal science with personal sentiment. It is quite legitimate in philosophical speculation to extend the range of sympathy beyond the scope of separate individuals and to include society and even the universe. Indeed, we might regard religion as the development of the capacity of sympathy to embrace the cosmos itself.

As in the case of imitation, sympathy is an important factor in the philosophical disciplines of ethics and esthetics. In moral theory, especially among the utilitarians, like John Stuart Mill, Adam Smith, Herbert Spencer and Leslie Stephen, it has been presented as the sanction and stimulus for conduct conducive to the common good. In esthetics, without the manifestations of sympathy, or *social resonance*[28] and *empathy* (the former a fellow-feeling with the artist, the latter a fellow-feeling with the artist's work), art would be lacking in the elements which give it allurement and satisfaction for man.

4. **Play.**—Three important theories have been presented to account for the capacity for play and its expression.

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[28] See G. T. W. Patrick, "Introduction to Philosophy," p. 431. (Houghton Mifflin Co., 1924.)

There is the theory of Herbert Spencer, who thought play to be the *natural outlet for an organism possessed of surplus energy.* To Karl Groos, play activity in children is a *preparatory performance,* giving the children skill for the execution of serious activities later on. According to G. Stanley Hall, play life *recapitulates the life of the race.* The increasing complexity of the games through which a child passes in his play activities is a token of the cultural development of man throughout his history. Play has in it fewer learned elements than work, and differs primarily from work in that in play the sense of duty stimulating us to achieve some ulterior end is lacking. In play we are interested in the activity itself, rather than its consequences.

Apart from its biological services to the organism, play is valuable to the philosopher as significant of several desirable dispositions. Successful playing requires an intense tendency to be curious; curiosity is the first step in the attainment of novel experiences, and novel experiences are the very life of play. So too in philosophy, the spirit of curiosity, or wonder, is the most desirable of traits. Again, to many philosophy is virtually a play reaction. It provides us with an escape from the ordinary and monotonous duties of the work-a-day world. In philosophy, as in play, we can revel in the activity itself, without thinking of the practical results of our philosophical behavior. This view of philosophy, however, is held more by critics of philosophy than by philosophers themselves. Philosophers do try to reflect in a way to produce theories of social serviceableness. Then, play always involves the factor of self-expression. In play, the child not only seeks to portray himself, but the self he attempts to disclose is an ideal or normative self. He plays the part of some giant or hero. Philosophy must always be the expression of one's private reflections; philosophy must always be an individual achievement; but philosophy must also be the reflection of what we want and ought to be, rather than a betrayal of what we merely are. Happiness can only come to the worker, but it will only come to him who works in the spirit of play. Whoever can carry out his vocation, whatever it may be, with the enthusiasm and enjoyment of play, is an artist and will receive the artist's joys.

So much for the view of the world which we gain through the functioning of our inherited physiological endowment. The notions we receive of reality by means of instincts, emotions, and capacities are the roots and not the fruits of philosophical thought, but, were it not for these roots, extending deeply down into our physical nature, the fruits of knowledge, extending upward into metaphysical nature, would not be. Let us pass now to a consideration of the second type of information, which we receive concerning our world without effort upon our part. As through biological inheritance we are given certain patterns of response, so through social heredity we obtain other systems of reaction, which enable us to meet various situations of our world. What knowledge does society deliver to us concerning the methods and meanings of life?

II. The Epistemological Significance of Man's Social Stimuli

We shall consider three social agencies of knowledge, namely, *custom, law,* and *dogma.* When we say that man comes into an environment in which these forces prevail and that he profits from them without contributing to their existence, we are thinking of a particular individual at a particular time; he is beset with prescribed rules of thought and action. The programs of action in society, which he sets up after original reflection and purpose on his part, seem insignificant in comparison with the number and the power of the prescribed rules levied against him by society itself. This is not to say that customs, laws, and dogmas do not originate in human relationships or that they are not modified by the reactions of man to them; it is only to indicate that their origin is so ancient and their alteration throughout the ages of human history so slow that they seem to people in any one period of time to have been graciously given by some supernatural power. The knowledge they have to offer concerning the environment of man may represent deliberate reflection upon the part of certain outstanding seers and forward-looking primitive leaders; but most of the customs, laws, and dogmas to which we conform to-day, valuable as they generally are, do not find their sanction in their intellectual excellency or in their philosophical validity. As in the case of the native physiological tendencies, these devices of social control provide us with the materials, rather than with the meanings, of our philosophical systems. They represent the human self in man meeting the urgent and complicated demands of life—and living must always precede philosophy, or else our philosophy is futile, false, and frail.

A. The Nature of Custom

As the native physiological tendencies give man the motives of action before the imperatives of the intellect are born, so customs, laws, and dogmas give him the methods of action in his prereflective life. Customs are the habits of a social group. Every kind of social organization, from the most primitive savage clan to the most aristocratic and sophisticated contemporary club, has its rules of behavior to which the members uniformly subscribe. The customs handed down from generation to generation and approved by each succeeding generation become the standards of right conduct. In fact the word *morals* comes from the Latin *mores,* meaning customs. It is true that many of our finest ethical practices have not become matters of general social usage, and it is true that many ways of behavior which are common to an entire group have no moral significance, but it cannot be denied that for most of us most of the time morality means conformity to the customs of our group. Professor W. G. Sumner has differentiated between customs which are without moral import and those which have moral significance by calling the former *folkways* and the latter *mores.* In the case of mores, the customs are not only carried out by the members of the social order, but there is attached to the customs an authoritative element, which leads the people of the group to understand that if the mores are disobeyed, punishment will be meted out. The authority which mores possess is explained largely by the ancient character of these social habits. ''To the primitive mind—and in all of us there is a good deal of the primitive—it is only the mysterious that is impressive, and custom would lose half its force if its origin and meaning could be rationally explained and logically justified.''[29]

Various customs have probably arisen for different reasons; some were handed on because they represented modes of activity which made for the survival of the group and its members; some received continued approval because they seemed to imply the good will of the gods; others persisted because they possessed an emotional appeal. The procedures of cooking, the forms of ritual, and of the dance are illustrations, respectively, of the three ways in which mores may have originated.[30] The original authority which mores possess because of their ancient aspect is reënforced by public opinion. People follow them because they fear the disapproval of the group even more than they fear disease or death. Many customs are definitely harmful and many are impediments in the path of progress, but, in the large, because they make for the solidarity of the group and the passing on of useful information from one generation to another, they must be considered as important steps in the attainment of the comprehensive view of reality demanded of the philosopher. In the knowledge of life to be acquired by an appreciation of custom, we learn the fundamental principles of responsibility and community, which philosophy has always attributed to the moral order.

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[29] L. T. Hobhouse, ''Morals in Evolution,'' p. 18. (Henry Holt and Co., 1915.)

[30] See Dewey and Tufts, ''Ethics,'' p. 52 ff. (Henry Holt and Co., 1908.)

B. The Nature of Social Law

Law is based upon custom, but law represents custom which is supported by a constituted authority. Law, excepting of course ''common'' or ''unwritten'' law, which is practically custom, implies the control of individuals in a group by means of organized government. Professor W. G. Sumner distinguishes customs from laws by asserting that laws are more institutionalized, intellectual, definite, and voluntary than mores.[31] Laws are superior to mores in definiteness and exactingness, but, in the last analysis, laws must be consistent with mores. Laws must either endorse old mores or they must replace old mores with new ones. No state can long endure which does not maintain the consent of the governed, and no people will long support a government whose rulers do not either sustain or institute mores which receive popular approval.

The philosopher is interested in law in three respects. In the first place, the relation of the citizen to his state is an aspect of the larger philosophical problem of the issue between singularism and pluralism. In the second place, the question as to whether the basis of the state resides in its physical might or in its ability to promote social welfare is a feature of the larger reflective question as to whether the world is the expression of material force or benevolent purpose. In the third place, the question as to whether the state as the maker and enforcer of laws is an entity, including but at the same time transcending the individuals within it, involves the problem as to whether or not there is an Oversoul which transcends as well as embraces the many features of our world.

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[31] See ''Folkways,'' p. 56. (Ginn and Co., 1907.)

C. THE NATURE OF DOGMA

As laws have developed out of the vague customs of primitive political life, so dogmas have developed from the vague practices of primitive religious activities. Dogmas follow the appearance of institutionalized government. The dogmas represent the attempt of religious institutions to define clearly the principles upon which and for which the institutions have been founded. It is not correct to say that dogmas and creeds represent a desire on man's part to escape from the world of social activity; on the other hand, they represent a desire to explain and sustain the most worth-while social activities. Theological creeds have not arisen because man found his present experience to be futile, but because he found it so rich and satisfying. Only a language involving references to the eternal and the holy could worthily express the meaning of his abundant life. It is not fair to criticize dogmas according to the criteria of scientific validity; they were aroused by situations of mystical ecstasy and make no claim to be significant of the matter-of-fact world. The doctrines of the church imply a personal relationship between man and reality, a type of relationship which scientific apprehension of the outside environment makes no attempt to effect. So long as creeds are not taken either by religionists or by scientists to be statements of historical or physical occurrence and are appreciated as expressions of the worth of man and his world, they may be legitimate interpreters of the real.

Just as laws which violate the best social practices cease to be obeyed, so, too, when dogmas no longer reflect vital religious enthusiasms, they lose their authority and their meaning. The danger with dogmas, customs, and laws is that they are not altered and extended to meet the ever-new situations which arise in the development of society and knowledge. To modify customs, laws, and dogmas which fail to promote our physical or our psychical welfare, or to formulate new ones of greater serviceableness, is the responsibility of individual thinkers. How individuals transcend the systems of knowledge given in biological and social inheritance, how they attain by their own intellectual efforts systems of thought which will rightly depict both man and nature, is the question for our next discussion.

Instincts, emotions, and capacities, customs, laws, and dogmas, give us notions of reality which are fraught with partiality and contradiction. Where is the source of knowledge which truly represents the outside world and which, when acquired, will provide us with the intellectual instrument for comprehending and controlling our world? Historically, there have been three great answers to this question: *rationalism, empiricism,* and *mysticism.* Each of these theories concerning the origin of knowledge regards true knowledge as superior to the deliverance of physiological or sociological situations, and each of the theories considers the knower as a factor in the knowing process. Philosophy is possible only when man himself is treated as a causal agency in the reception or production of knowledge. What do the rationalists, the empiricists, and the mystics have to say concerning the beginning of knowledge?

III. The Traditional Philosophical Explanations of the Source of Knowledge

Before entering into our discussion of the three main doctrines concerning the sources of knowledge, it should be pointed out that for rationalists, empiricists, and mystics alike the fundamental ground of experience is the consciousness of the experiencing individual. Whether you explain the immediate consciousness of the knowing individual in terms of mind or matter, or whether you explain the introspective process by means of which the individual is aware of his experience as psychological or physiological, the presence of an inner store of knowledge in the individual must be taken for granted. The problem of epistemology is to ascertain how we arrived at this body of experiences of which we are immediately aware. The two most famous answers have been those of rationalism and empiricism; the former asserting that through reason we get knowledge, the latter affirming that sense perception is the fundamental source of knowledge. Mysticism declares that knowledge is attained by means of experience that, although it may involve both reason and perception, depends upon a method of knowledge that has characteristics all its own. Let us now examine these theories in more detail.

A. Rationalism

The term *rationalism* as here used is not to be confused with the term as it is sometimes applied to those who exalt the scientific method and insist upon scientific technique in the study of religious practices and literature. Those who apply the higher criticism to the study of the Bible and those who would separate religion from supernaturalistic and ecclesiastical implications are sometimes called rationalists. They are *methodological rationalists,* rather than representatives of the *philosophical rationalism* which we are now discussing. Philosophical rationalism treats of the origin of knowledge, not of its use. For the rationalist as we are thinking of him, the experiences which we gain by means of sensation, as taste, smell, sound, color, and so on, are just the stuff of knowledge. This raw material of sense perception must be organized into a system before it can possess the aspect of meaning, which, for rationalism, is the prerequisite of real knowledge. In other words, the rationalist finds knowledge in concepts, principles, and laws, rather than in awareness of particular objects. To the rationalist, empiricism is defective on two counts: it treats experience as composed of items which are inconsistent with each other and, in themselves, only of passing validity; again, it makes mind too passive, overlooking the fact that mind is a dynamic systematizer of experience, ordering our knowledge on the basis of fundamental laws of thought. The thoroughgoing rationalist not only emphasizes the laws of thought as principles of mind; he interprets them also as the basic principles of nature in general. He is prone to contemn the facts of ordinary existence, extending this attitude to the degree of scorning human beings, who, ruled solely by prereflective stimuli, manifest no zeal either to know or express the principles of the truly intellectual life. The rationalist is frequently a warm believer in an ''aristocracy of brains.''

The temptation of the rationalist is to go beyond the immediate bearings of the concepts and principles which he discovers to be immanent in things, and to give these products of the higher mental life a status not only external to the knowing mind, but even external to the things themselves. The radical rationalist goes to the extent of making laws, values, concepts, and the like, independent, self-existent entities, associated with mind and matter, but in no sense dependent upon either mental or material nature for their being. The reason for this otherworldly character of rationalism is to be found in the fact that, for rationalists, mathematics is the pattern of true knowledge. Mathematics is notoriously abstract and ethereal; it deals with ideal structures; the points, lines, circles, and planes of mathematics have no place in the world as we know it; and again, an apprehension of many of the relations found in mathematics requires an intuitive insight which is more often associated with mystical revelation than with the inductive discovery of scientific procedure. The rationalist, however, has good grounds for taking mathematics as the model for his thinking. No type of knowledge is more certain or more accurate than mathematics; moreover, mathematics, in displaying the geometric method whereby particular conclusions can be drawn from general axioms and definitions, provides a deductive method applicable to all branches of knowledge. The wonderful achievements of modern science in the prediction and control of physical and psychological events would not have been possible without the formulation of the mechanical theory of nature, and the mechanical theory would not have been possible without the scheme of thought furnished by mathematics. Parmenides, Plato, Descartes, Spinoza, and Leibnitz, leading rationalists in the history of philosophy, all patterned their reflections on the model of mathematics.

B. Empiricism

The term *empiricism* comes from the Greek word ἐμπειρικός, which means *experienced.* To the empiricist, the only way to get knowledge is to learn by experience. Except for the biological and sociological factors already discussed we have no ready-made ideas or innate principles. The basic part of the Greek word for experience, πεῖρα, signifies *trial* or *experiment.* To the empiricist, the attainment of knowledge always involves the aspect of trial; we learn by "trial and error." For the exponent of empiricism, the universally valid laws about which the rationalist speaks are valuable as objects of esthetic contemplation or religious worship, but they are hopelessly irrelevant to the real world of space and time.

Laws are not statements of affairs in objective reality, but formulations in the mind. The law of causation to a simon-pure empiricist does not represent necessary connections between parts of the external world, but represents rather the tendency of human beings to habitually observe certain events in the same order of succession. There is a necessity between factors in our experience, not because these factors follow certain basic principles which, according to the rationalist, are the eternal laws of nature's behavior, but because the mind always organizes the impressions according to certain psychological principles called the laws of association. Causality, to the empiricist, is *subjective expectancy,* not *objective necessity.*

When the empiricist speaks of mind, it must not be thought that he regards mind as possessing the substantial, dynamic, creative character attributed to mind by the rationalist. Mind is but the container of sense impressions and of ideas, which, in empiricism, are impressions retained in memory. Indeed, to the archempiricist, David Hume, there is no mind at all apart from impressions and ideas. The most famous empiricist description of mind is that of John Locke, who regarded it as a blank sheet of paper upon which are imprinted ideas received by sensation, reflection, or by both processes.[32] Empiricism is defective in denying the active character of mind; mind is not a passive receptor in the knowing process, but, by virtue of the analyzing and synthesizing capacities, which we shall consider in the next chapter, it is a positive determiner of knowledge. Empiricism is faulty also in making knowledge solely a matter of the relationships between ideas in mind. True knowledge must somehow or other be significant of the objective world outside of mind. The value of empiricism lies in the fact that it showed the way to a genetic treatment of knowledge. Discounting the *a priori* principles and innate ideas, championed by rationalism, it demonstrated that these principles and laws can be reached by the inductive methods of scientific description and generalization. It paved the way for *positivism,* propounded by August Comte. And positivism, with its insistence that science should not seek to pry below or beyond observable facts and their interrelations, has become the methodology of practically all contemporary sciences.

Rationalism and empiricism are generally right in what they affirm; but often false in what they deny. Each doctrine is partial. A combination of the two is necessary for a complete interpretation of the origin of knowledge. A celebrated mode of synthesizing the two theories is the critical method of Immanuel Kant. As Kant's theory deals more with the problem of the relevance of knowledge to reality than with the question of the source of knowledge, we shall consider his point of view in Chapter VII. Kant's doctrine, however, divides experience into two parts, the noumenal and the phenomenal, with the former aspect receiving the greater merit. In the next chapter, we shall try to suggest a theory of reconciliation between rationalism and empiricism, which will portray sense and reason as equally important aspects of one stream of thought.

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[32] See ''An Essay Concerning Human Understanding,'' Book II, Ch. I. (Open Court Publishing Co., 1905.)

C. MYSTICISM

Mysticism is a term of many meanings. It has been a name applied, not without contempt, to sentimental and superstitious rantings, to belief in spirits and demons, and to all sorts of occultism and magic. The practices of mediums, sorcery, poetry and music, medieval art, palmistry, and even forms of intoxication have been labeled aspects of mysticism. Historically, however, mysticism has represented a definite and specific tendency of the human spirit, namely, the tendency to have direct access to divinity. The mystical impulse is man's innate desire to attain an immediate knowledge of reality, his longing to be at one with God, his eager craving to find all questions answered and all discords dissolved in eternal harmony. One reason, perhaps, for the association of mysticism with things weird and uncanny is the present widespread indifference to practices which are of tremendous worth to the mystic. If we are frank, we shall confess that much of our disdain for mysticism is not due to the fact that science has shown the phenomena of mysticism to be natural and accountable, but to the fact that for us, the goal of mysticism is barren and lifeless. Much of our contempt of mystical ecstasy, we must admit, is like the scorn of the boor for beauty. Ours is the arrogance of ignorance, the hauteur of self-conceit. Until we have undergone the toil and trials of the Mystic Way to see for ourselves, it would, perhaps, be the part of fairness to take the mystic at his word, for irrational though his performance may be, his achievement may be productive of practical and social benefit to men.

The transcendental order with which the mystical union is sought may be conceived theistically, as the God of Christianity; pantheistically, as the World-Soul; or speculatively, as the philosophical Absolute. There are different types of mysticism also, corresponding to the various techniques for achieving oneness with the divine. Mysticism may be esthetic, speculative, or ethical, depending upon which of the three aspects of psychic life, feeling, thought, or will, is emphasized by the mystic as of greatest importance in attaining the desired ecstatic state. Broadly speaking, the pantheistic nature poets, as Wordsworth, Shelley, and Tennyson are exponents of the emotional type of mysticism. Among religious mystics, who are also representative of the emotional group, but who are not pantheists, may be mentioned Meister Eckhart, Saint Theresa, Emanuel Swedenborg, and William Blake. The speculative type has been chiefly represented by such philosophers as Plato, Spinoza, Hegel, and Royce. The third type, ethical mysticism, has found firm supporters in men like Isaiah, St. Paul, St. Francis, Washington Gladden, John Wesley, and Mahatma Gandhi.

The ways which various mystics have taken to reach their God have been very different, but in the processes of them all can be found three fundamental stages, which may be designated by the terms *purgation, meditation,* and *contemplation.* The evils and excesses of mysticism arise when the mystic considers these ways as goals in themselves, when the means are treated as ends, and when the joy of the mystical journey becomes more attractive than the duties which await at the destination of the trail. Purgation is the effort to put away all fleshly desire and ambition. It means the abandonment of one's own will, and the cleansing of self from all sins and evil ways. It is the stage of purification, of mental and moral self-suppression. After this negative practice comes the process of meditation, a positive performance in which the mystic reminds himself of the absolute good. This second stage is a stage of prayer and introspection, a period of silence and quietude. The third stage of the mystic way is the goal of the mystic's desire; it is the stage of union, illumination, and oneness with God. The soul goes back to the eternal Being who gave it, and the self revels in the ecstatic realization of reality. The unitive state is not of long duration, but during its spell the mystic is inspired to artistic production or social service. The glorious rapture cannot be put in cold and formal phraseology; it must burst forth in esthetic creation or in expressions of altruistic love. This experience of the mystic is not something to be reasoned about. In life, not in logic, is the justification of his claims. If you have arguments of refutation, it will not pay you to set them before the mystic. He will not say that you are wrong; he will not say that he is right. His reply, like that of religionists the world over, is seldom a proof, but always a challenge. He will simply say, but in accents of curiosity-raising certainty and joy, "Taste for yourself, and see."

D. Other Proposed Theories

Other methods of obtaining knowledge are sometimes presented, namely, authoritarianism, skepticism, pragmatism, and intuitionism.[33] *Authoritarianism* has already been implied in our discussion of the sociological backgrounds of knowledge; authoritarianism is merely a theory to account for the especial force which certain social stimuli possess because of their long usage, their widespread popularity, or the peculiar prestige which they enjoy due to association with revered individuals or institutions. *Skepticism* takes knowledge just as it comes in immediate experience, asserting that it is impossible to get at the origins of knowledge and declaring, therefore, that the whole procedure, to discover whether or not knowledge has been correctly received, is a foolish performance. The skeptic delights to point out the contradictions between our experiences due to changes of time, spatial relationships, physiological conditions of the knower, psychological associations of the knower, and so on. All of our impressions are full of inconsistent aspects. Inasmuch as absolute skepticism has persistently proved untenable either from a theoretical or practical standpoint, and inasmuch as it is, for the most part, the point of view towards reality which precedes and provokes philosophy, rather than a doctrine which results after philosophical reflection, it does not seem necessary to give it further attention. We only wish to point out that, however inadequate skepticism may be as a final philosophy of knowledge, it represents in its insistence upon critical inquiry, an attitude of mind essential in valid intellectual procedure. *Pragmatism* is an epistemological doctrine which presents a very important conception of the origin of knowledge, but as we shall consider it in Chapter VIII, in connection with the criteria of truth, we shall not deal with the pragmatic theory now. *Intuitionism* is a theory closely related to both rationalism and mysticism. It is definitely a theory concerning one kind of source for knowledge, but, inasmuch as the doctrine has historically been associated to a great extent with knowledge in the sphere of morality, we have postponed our discussion of the intuitionist's standpoint until a later chapter on ethical problems.

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[33] See W. P. Montague, "The Ways of Knowing," Part I. (The Macmillan Co., 1925.)

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CHAPTER VI

THE NATURE OF KNOWLEDGE

IN THE discussions of the last chapter, in which we treated the backgrounds of knowledge, we dealt extensively, of course, with the nature of knowledge. So now, as we examine the nature of knowledge, we shall necessarily present factors which might well be classed as sources of knowledge. Distinctions between origin and nature are largely artificial, valuable for purposes of instruction, but not truly relevant to reality, which reveals no gaps between the ''whence'' and the ''what.'' Granted, therefore, that the problem of the last chapter and the problem of this chapter are two aspects of one inclusive consideration, we come to a consideration of the aspect which deals with the nature of knowledge.

What is meant by the nature of knowledge? In the present concern we shall be interested in isolating and describing the contents of our experience. The forms of knowledge—that is, the different ways by which, in our consciousness, we are made aware of the world of things outside of our subjective minds—are discriminated and discussed. The separation of our field of consciousness into various parts is a conceptual type of analysis; our analysis of our experience into many components is not intended to mean that our minds are not continuous streams of thought. Furthermore, the division here made between subjective minds and outside things is not to be taken as indicating that the inside and outside worlds are two separate types of being, having opposed properties and being divided by some sort of mysterious gulf. The question as to whether or not the subjective and objective spheres are *one* or *two* is a very important concern in epistemology, and represents the problem with which our next chapter specifically deals. The present chapter, therefore, considers the items in our experience from the standpoint of the particular rôles they play, postponing the question as to whether they are material or mental entities. Using the idea of Professor D. C. MacIntosh, we might call our immediate problem that of the *morphology* of knowledge.[1] Psychological terms will be used throughout the present chapter, but the schema of our discussion will be that of logic, rather than that of psychology.

Knowledge may be regarded as involving the following processes: *description, explanation, interpretation.* No one of these modes is ever active without the other two being at least potentially present. The stage of description alone is the stage of common sense; description and explanation taken together give the stage of science; all three processes, joined together, constitute the comprehensive range of knowledge which we have called philosophy. Putting the state of affairs in another way, we may say that description gives us the facts of science; explanation, the laws of science; interpretation, the principles of science. Two other processes are sometimes added to those just mentioned; namely, *conviction* and *appreciation.* These additional forms, however, rather than being separate and unique processes, seem to be attitudes which the knower assumes in carrying out the other types of knowledge. Conviction or appreciation may be present in either description, explanation, or interpretation, but, of course, the conviction or appreciation will be of higher order when associated with interpretation, rather than with description or explanation. The definitions of conviction and appreciation will be given when we have finished with our discussions of description, explanation, and interpretation.

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[1] See "The Problem of Knowledge," Ch. XV. (The Macmillan Co., 1915.)

I. The Function of Judgment in Thought

Before going further, we must point out that description, explanation, and interpretation are forms of judgments. There can be no real knowledge without judgment, for only when knowledge is in the form of judgment can it be regarded as true or false, useful or futile, good or bad. To enumerate the judgments which man may make, is to classify exhaustively all the contents of his knowledge. Whether we talk about an ordinary matter in everyday experience or speak with respect to the most abstract conceptions in mathematical science, if our statement is to be significant, it must express in language what, in thought, is called a *judgment*. What now, is judgment?

A. JUDGMENT AS FUNDAMENTAL IN KNOWLEDGE

Judgment is the intellectual situation in which the knowing mind recognizes that an object possesses or does not possess certain properties, or that an object is or is not a member of a certain class of entities. The object, the properties, and the class of entities referred to in the preceding statement may be either mental or physical, concrete or abstract. The intellectual situation, itself, however, whether judgment is thought of as an act or as the product resulting from a judging activity, is, of course, always a definite affair in a mind. When judgments are expressed in verbal or written language, they are called *propositions*. Illustrations of judgments in propositional form are: coal is carbonized vegetable matter; H. G. Wells is not an American; honesty is the best policy; memory is not always dependable. From these examples it can be noted, as Professor J. A. Leighton points out, that ‘‘every judgment that is seriously meant has for its subject some fragment or aspect of reality; and every judgment affirms (or denies, and thus implicitly affirms) that the fragment or aspect of reality which is its subject is qualified by, or in some way connected with, some other fragment or aspect of reality. Thus the thinker, in making a judgment, affirms that he has apprehended the *meaning of a relation between existential data or facts. To apprehend and comprehend facts in relation is the whole business of thinking as such* (the psychical motives which impel to thinking are another question); *and the relation, if correctly apprehended, is a constituent of the whole fact* as apprehended and comprehended."[2] The possibility of expressing relations between aspects of the world in propositions having the subject-copula-predicate form should not keep us from realizing the fact that the relations in reality are a unity and that the features related form a whole or one. Propositions by their very nature, with the parts of speech separate and in one-two-three order, sometimes falsely suggest the idea that things related in judgment are just added together and that their being together does not modify them or constitute a unified system. It is the standpoint of this text that the nature of reality is betokened in the nature of knowledge. Therefore, since judgment, which is the fundamental element of knowledge, represents a continuous process in which subject and predicate are blended, the reader can anticipate here and now that later on we shall be interested in supporting the internal theory of relations more vigorously than the external theory, and that we shall suggest that singularism, rather than pluralism, is the more adequate ontological doctrine.

The ultimate form of judgment is to be found in interpretation. In description, judgment often does deal with things analytically; in description, the judging activity is concerned with aspects of an object, rather than with the relation of an object to other objects. In interpretation, however, judgment considers objects in terms of the contexts of which they are members; in interpretation the aim is to arrive at the universal meaning of objects; in interpretation the synthesizing function of thought is at work. In explanation, which is the mid-process between description and interpretation, judgment manifests the operations of both analysis and synthesis. In explanation judgment is analytic in that it discloses relations and properties which are part and parcel of the object; in explanation judgment is synthetic in that it presents relations and properties which are not inherent in the object, but which represent features received by the object from external influences. It must not be thought, however, that the analytic and synthetic functions of judgment can be separated; as description, explanation, and interpretation always come together, so analysis and synthesis are always co-workers in judgment.

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[2] "Man and the Cosmos," p. 31. (D. Appleton and Co., 1922.)

To conclude this section, we reaffirm that *judgment is the means by which a knowing subject can organize the contents of thought, presented by objective reality, into a comprehensive, unified, and meaningful system.* How does it happen that the knower can persistently carry on the judging operation in uniform manner? How does it happen that the objects interpreted in judgment always possess the same patterns of organization? The answers to these questions are to be found in certain presuppositions which are the grounds of all thought. The fundamental assumptions are *axioms, categories,* and *postulates.* Let us notice these basic factors in turn.

B. The Grounds of Judgment

1. The axioms of thought.—An axiom is the simplest form of judgment which must be taken for granted if thinking is to have any incentive or validity. In a proposition which represents an axiomatic judgment, the predicate term brings out an idea implied in the subject term. For example, in the axiom from geometry that "A whole is greater than any of its parts," it is readily appreciated that to be a "whole" means to be greater than a "part."

Axioms usually are not arrived at by inductive investigation; generally they seem to be immediate insights, *a priori* principles, which determine rather than follow experience. The truth of axioms is not found by examining their relations or consequences; their validity is self-evident. We have no arguments whereby we can prove that "a straight line is the shortest distance between two points"; even to question the validity of this axiom or to hunt for reasons for its validity strikes us as an entirely unnecessary procedure. Three axioms are of special importance as fundamental principles of intellectual activity. They are generally called the *laws of thought.* The term "laws" is not appropriate in this connection, however, and we are classifying them definitely as axioms. The basic principles are *identity, contradiction,* and *excluded middle.* In regarding these bases of thought, it must be remembered that judgment always involves the relation of the knowing mind to objects outside the knowing mind; the so-called laws of thought, therefore, may legitimately be conceived as laws of things as well as laws of mind. They are illustrative of the point of view, endorsed in this text, that the laws of the physical and the laws of the psychical are one. With this brief interpolation, let us find out how the three fundamental principles of thought are defined.

The *axiom of identity* may be stated this way: "Whatever is, is." It is a judgment represented by the propositional form, *"A* is *A."* Unless we base our thinking upon the principle that *A* is *A,* or, in other words, that an object remains itself in spite of changes in it or about it, we can never reach meaningful conclusions. If the subject of our discourse or reflections should constantly be changing into something other than itself, there could be no thought at all. The principle of identity, whether it is applied to a finite mind or to the universal mind, or Absolute, does not imply a static oneness; it implies unity, but unity in the midst of diversity; the axiom is really that of *identity in variety.*

The *axiom of contradiction* is a statement of the situation that we cannot think of an object that *is* and *is not* at the same time. Identity draws attention to that which an object must be; contradiction points out that which an object cannot be. This is shown in the propositional form of the principle of contradiction, which is "*A* is not non-*A*."

The *axiom of excluded middle* bears out the impossibility of two contradictory propositions being true at the same time. There is no middle ground between two contradictory propositions; one must be true; the other must be false. Excluded middle, stated as a proposition, is "*A* is *B* or non-*B*." It must be acknowledged that certain features of reality, as life, motion, and the like, seem to possess contradictory qualities. Motion means that an object is here and not here at the same time; life means that an organism is stable and unstable at the same time. Nevertheless the axiom is valid for thought, and we must confess that intellectual activity cannot grasp such entities as motion and life in a way to realize their true dynamic nature. The opponents of formal logic, for examples, F. C. S. Schiller and Henri Bergson, insist that, because of the axioms of thought which dominate our thinking, our knowledge, with its static norms, falsifies the living real. Granted that thought, carried on in conformity with the axioms of logical thinking, does lack the zest and vitality possessed by the world of change about us, nevertheless, without these principles, the sphere of thought, which, after all, is the nearest and dearest of all realms to us, would be a hopeless chaos. The deficiencies in a purely formalistic mode of thought are met by the condition that all types of experience, even the most abstract and mathematical, involve intuitive and dynamic aspects.

2. The categories of thought.—As the axioms of thought provide basic principles for the subjective side of judgment, the categories furnish the fundamental principles for the objective aspect of judgment. The assumptions of identity, contradiction, and excluded middle account for the orderliness of the judg*ing* in judgment; the categories explain the orderliness of the judg*ed* in judgment. The categories pertain to characteristics of objects which are essential to the very existence of the objects. The categories represent the appearance in judgment of features universally present in the things known to and by thought. Whenever or wherever we perceive a part of reality, we can be certain that the object perceived is interpretable in terms of the categories. If, for instance, we deny to an object certain categories, as space, time, number, or quality, we cannot conceive of its existing at all. An object without qualities, without quantitative character as being one or many, without location, without relation to anything else, cannot be imagined. Aristotle was the first philosopher to make a formal list of the categories. He included in his enumeration Substance, Quantity, Quality, Relation, Time, Place, Position, Possession, Action, and Passion. Hegel interprets reality as a dialectical process in which inclusive and synthetic categories are produced from opposing, constituent categories. The universe is the expression of three fundamental categories, Being, Essence, and Notion, and each of these involves several triads of subsidiary categories. The most famous scheme of categories in the history of philosophy is that of Kant. Kant grouped twelve categories into four divisions: Quantity, Quality, Relation, and Modality. Quantity included unity, plurality, totality; Quality comprised reality, negation, limitation; Relation contained inherence and subsistence, causality and dependence, community or reciprocity; Modality embraced possibility and impossibility, existence and non-existence, necessity and contingency. The categories conform to the twelve sorts of judgments possible according to formal logic. The twelve kinds of judgments represented by the categories of Kant are: universal, particular, singular, affirmative, negative, limiting, categorical, hypothetical, disjunctive, problematic, assertory, and apodictic. The tendency in recent philosophy seems to be to include with the traditional categories, categories of value, categories which represent judgments of appreciation rather than mere judgments of fact. The inclusion of such categories as beauty, goodness, love, and purpose, categories emphasized in ancient thought by Plato, is illustrative of this trend.

There are some philosophers who would reduce reality to one category. The categories mind, matter, energy, substance, God, and personality are principles each of which has been employed by certain thinkers as the one and only interpretative category. It does not seem desirable, however, to use the term *category* in this inclusive sense, because the peculiarities of individual objects would still have to be accounted for and principles for the interpretation of particular things, whether they would be called *categories* or not, would have to be devised. In other words, *categories represent the ways in which the various aspects of reality appear to our judgment when our judgment is operating on the level of immediate experience.* To arrive at a theory which asserts that the world is matter, or mind, or God is significant of a highly reflective activity and involves constructed principles of interpretation which are far from possessing the *a priori* character of the categories. The universal forms of thought, arrived at after serious and patient speculation, may have, however, just as objective a reference as that enjoyed by the native categories of thought. Whether or not the categories are subjective forms or objective structures, or both, is a question whose answer is dependent upon one's view regarding the relation of knowledge to reality. This latter problem is the burden of our next chapter.

3. **The postulates of thought.**—A postulate may be considered a combination of axiom and category. Axioms and categories refer respectively to the subjective and objective aspects of judgment. Postulates represent fundamental principles that apply to both features of judgment.

Postulates differ from axioms in that the latter are usually employed in reference to a concrete, existing entity, whereas the latter is generally used in connection with the deductions of abstract mathematical science. They are, however, often used interchangeably. Professors F. C. S. Schiller and Bernard Bosanquet treat the laws of thought both as axioms and as postulates. Postulates differ from categories in that they deal with grounds of thought even more fundamental than the categories. The categories refer to characteristics of objects; postulates refer to the general nature of the system of which objects, interpreted by categories, are parts. Postulates present a universe in which axioms and categories seem rational. Axioms and categories may function without the thinker's being involved in a metaphysical theory; in using postulates, however, the thinker generally reveals his readiness to carry thought to the domain of metaphysics. Perhaps the most well-known postulates are those of Kant—God, freedom, and immortality. These postulates, however, are not strictly postulates of thought, because they are presented to substantiate morality rather than to validate knowledge. Three postulates, without which the processes of description, explanation, and interpretation would be impossible, are worthy of notice. They are: *sufficient reason,* the *uniformity of nature, parsimony.* Let us examine them briefly.

a. The postulate of sufficient reason assures us that things do not happen hit-or-miss in our world. "There's a reason" is a slogan applicable to all parts of the universe. For all circumstances in the cosmos there are antecedent, co-existent, and consequential events with which the circumstances are causally connected.

b. The postulate of the uniformity of nature indicates that nature has a routine way of doing things; nature has habits. Things that have happened together in the past will happen together in the future, provided the conditions are the same. If reality were not uniform, then it would be futile and foolish to try to predict or control events. Science is dependent upon the mechanical conception of nature, and the mechanical conception of nature is another way of saying that nature is uniform. We are using the word *nature* here in a wide sense; it is to be recognized, of course, that the principle of uniformity applies to mental as well as to physical occurrences.

c. The postulate of parsimony points out that nature is very stingy with the causal forces which she employs to produce effects. The principle is often called "Occam's Razor" because of this statement of William of Occam, a scholastic philosopher: *entia non multiplicanda sunt praeter necessitatem,* "theories should not be multiplied beyond necessity." The postulate of parsimony makes it imperative for scientists to use as few principles as possible in explaining facts. Parsimony makes for simplicity in science and encourages the reduction of complex states of affairs to most simple types of being. It is because of this postulate that psychologists, sociologists, and biologists are trying to express their doctrines in terms of physics, and the physicists, in turn, are reducing their theories to purely mathematical formulas. It must be noted, however, that simplicity here does not mean ease of understanding; simplicity in science refers to the absence of esthetic, religious, and moral presumptions in the scientific process. The postulate of parsimony does not deny soul, purpose, love, beauty, or God: it only insists that their incorporation into scientific theories is irrelevant and even confusing. The philosopher will be quick to point out, therefore, that truth is more than science, and that a postulate like that of totality is more significant of the real nature of things than a principle like that of parsimony. In other words, knowledge must be more than descriptive, explanatory, and interpretative; it must be appreciative also. Truth is an affair of the "heart" as well as of the "head." The main purpose of this chapter, however, is to discuss the intellectualistic, rather than the inspirational, aspects of knowledge. So now that we have surveyed the fundamental principles which underlie the judgments that constitute our thinking, we shall proceed with our study of description, explanation, and interpretation.

II. The Main Types of Knowledge

A. DESCRIPTIVE KNOWLEDGE

As we enter into our discussion of description, let us remember that it is a stage, the first stage in scientific method. In studying the nature and prerequisites of description, as will also be the case when we consider explanation and interpretation, we are actually treating the principles and procedures of science. If it appears that our discussion of the nature of knowledge is too largely involved in a consideration of knowledge as science, we can only reply that, by all odds, science is the dominant type of thought in our culture to-day, and, even though we may at times deplore the great emphasis which it receives in our intellectual life, our very desire to criticize the situation makes it necessary for us to know as completely as possible what science is and what it is aiming to do. Let us now go on with our examination of descriptive knowledge.

1. **Description as factual knowledge.**—Description is a phase in the attainment of knowledge which reveals things as they are, or, perhaps, as we observe them to be. In other words, it is not a type of knowledge which regards the things of the world in the light of our ideals or in terms of our hopes for them. In short, descriptive knowledge is not normative. To say this, however, is not absolutely true. Even in the most simple sort of seeing or hearing we may get hold of outside realities in a way to arouse the sublime within us. To behold the moon, or the sea, or a mountain top, and to experience at the same time an esthetic thrill in the beautiful, is a delight which has

come at times to all of us. It is possible, however, to abstract from the complete rich experiences, which we have in observation, the impersonal, objective features, and to regard these features as they might be examined by a being without emotion. To put the matter another way, in description we are interested in the primary and secondary, rather than the tertiary qualities of objects. The primary qualities are those of size, shape, motion, mass; qualities which seem to be the most permanent in objects and which appear to be the same for all individuals. The secondary qualities are those like smell, taste, sound, color; qualities which fluctuate in objects and which are different for different individuals. Tertiary qualities, like beauty, worth, purpose, for most philosophers are treated as wholly relative, being ascribed to objects by the observer. The problem as to how many of these types of qualities are in mind and how many are in the external physical thing is one of the most crucial in philosophy, and over its solution thinkers have divided into the two outstanding camps of idealism and realism. Right now, however, we are not concerned as to the ontological status of qualities; all we need to know for the present is that in description the knower finds out that the things of the world can be discussed in terms of size, shape, motion, color, sound, number, and so on. In short, description gives us knowledge of facts. What, then, are facts?

2. **The nature of facts.**—The realm of facts is sometimes called the realm of common sense. It seems, however, that common sense goes a little beyond fact to give us elementary kinds of explanation: An animal can have factual knowledge, but we do not think of animals as manifesting common sense, our use of the term "horse sense" notwithstanding. Facts are the objects of sense perception. They are data of feeling, smelling, tasting, hearing and seeing. Whether facts are identical with sense percepts or whether they are independent of our perceptive process is a question irrelevant to our present purpose. Our immediate

problem is to discuss facts without going into the question of their real being. We are now interested in epistemology, not in ontology, nor even in the ontological implications of epistemology.

The characteristics of facts are as follows:

a. Facts are always particular things. A chair is a fact; a mountain is a fact. Justice is not a fact; God is not a fact. When we say that justice and God are not facts, we do not mean that they are less real or less valuable than facts. We mean, rather, the opposite. What we do mean is that justice and God are not particular things. They cannot be observed in sense perception to be individual objects. Again, the statement "George Washington was the first President of the United States" is not a fact. The statement is a proposition, and propositions are not facts; they are relations between facts. Of course, in ordinary conversation we speak of certain statements as being facts. In a way this is legitimate, because correct propositions refer to situations which usually could have been objects of sense perception. The element of sense perception is so significant in our knowledge of facts that we shall devote a special section to it below.

b. Facts are external to the knower. Whether facts are physical or mental, they have the aspect of out-thereness. They seem to be independent of the perceiving mind. The mind appears to be passive in receiving them. We make theories; we take facts. Facts are facts, we say. Face the facts, we advise. This does not mean that facts are more true than theories; it does explain, however, why they seem to be more true and more indicative of the real world. They have an insistence and vividness which seem to carry the authority of truth and reality. Philosophers, however, have long since learned that the most obvious and the most intense types of knowledge are not necessarily the most dependable.

c. Facts can be measured. We can count them, tell their size, weigh them, calculate their motion, and so on. When we have found out about facts and have our knowledge in terms of inches, degrees, and other units of measurement, we can communicate our findings to others and they will know what we know about the facts. Some of the greatest experiences are not factual, not because they are not real, but because we have, at least as yet, no principles or instruments to employ for their measurement. Mysterious experiences of Deity, the love of a man for a maid, the profound delight of opera,—these cannot be communicated except in poetry, and how few are the poets to understand their meaning.

d. Facts are related to other facts. Description isolates facts from facts and pays attention to particular objects, but, after all, this discrimination is artificial. No sooner do facts stand out in their separateness from other facts than explanation finds them to be joined in a community of relationships. In other words, facts have meanings, as well as qualities. They mean something to other facts; they mean something to man; they mean something to God. The true knower is soon beyond the realm of fact and out and on into the wider and more universal world of meanings. He is out to find the laws of facts.

e. Facts are phenomena. By this we do not mean that they are merely occurrences, as the term *phenomena* is so often defined. To say that the scientist in dealing with facts is dealing with phenomena means that he, as a scientist, is not interested in the realities behind the facts themselves. Facts are the appearances, the manifestations of the real. What the real itself is, is, of course, of great concern to the scientist as a man with esthetic, religious, and moral interests; but, as a scientist, he need not raise questions about the nature of the metaphysical behind the physical. In other words, regarding the question as to whether the world beneath and beyond facts is God, energy, mind, will, or matter, he, as a scientist, is indifferent. It may be pointed out, however, that scientists are not now so agnostic as they formerly were; scientists, especially the present-day physicists, are manifesting great interest in the fundamental realm underlying the domain of facts.

3. **The logical implications of facts.**—When a particular thing is the object of sense perception, we call the thing, as we have pointed out, a fact. When the fact, as perceived, becomes an object of logical discussion, that is, when we regard it as an item in thought rather than as an entity outside of mind, it is called a *term*. Just as a banker when he becomes a Rotarian is still a banker, so a fact when it becomes a term is still a fact. The fact and term aspect are simply the objective and subjective sides of the sense-perceptional judgment. Two important logical processes are carried on with regard to terms, namely, *definition* and *classification*. Both of these processes make clear and definite the full character of a perceived fact; they are the perfecting instruments of description.

Definition may be of six types. The most important kind of definition scientifically, the kind which gives essential knowledge of a fact, is that by *genus* and *differentia*. In this sort of definition the term is placed in a class of objects (*genus*) and the characteristics which distinguish it from other members of the same class (*differentiæ*) are stated. The class should have as small a scope as possible; otherwise the number of differences to be stated would be unwieldy. In other words, definition should be, if possible, by the *proximum genus*. The genus and differentia, unless the definition is for some artificial purpose, should refer to attributes which deal with the essential nature of the term defined. The definition should not contain information which would include more or fewer terms than the term defined; it should ordinarily be in the affirmative; it should not be merely a synonym of the term defined; it should not be stated in obscure or figurative language. Because it is not always possible to define terms in this exacting form, the other five types of definition are necessary. They are: (1) *By qualification.* When the term is so large or so unique that it cannot be placed in any class it is defined by its attributes only, as, for instance, God, energy, consciousness. (2) *By identification.* When a term is so abstract and simple that it possesses no attributes, it is defined by genus only, or else it is defined negatively, the properties it lacks being stated. Example, a point. (3) *By illustration.* When it is not clear as to what the genus and differentia are, a term is sometimes defined by examples. For instance, the nature of kindness may be indicated by citing a case of aid to an injured dog. (4) *By composition.* This sort of definition is used to give the ingredients of a fact. H_2SO_4 would be this kind of definition of sulphuric acid. (5) *By imitation.* This kind of definition would be used if we should make a sound to show the noise of an airplane motor or go through steps to show the nature of a certain dance.

Interdependent with definition is the process of *classification.* Definition would not be possible were it not for the presence of classes possessing certain characteristics into which terms as defined can be placed. Again, classification would not be possible were it not for definition which points out the characteristics which are used as the basis of class groupings. To ask which is first is like asking the old question "Which was first, the hen or the egg?" Both processes really go beyond description and serve as elementary explanation, because in definition and classification facts are not merely described as separate items, but they are treated as members of a system of facts. But what is classification? *Classification is the logical process of organizing a class of items, mental or physical, by separating it into various smaller classes whose members are grouped together because they all possess a common, selected attribute.* The principle of parceling may be any property which satisfies the particular purpose of the classifier, but in scientific classification, the factor selected as the basis of grouping must be one which belongs to the essential nature of the members of the classes formed. Furthermore, only one attribute and one that is common to all members of the class should be used in classification. The members of the class, or constituent species, as they are called, when added together must include the entire field represented by the class and must not include any items not represented by the class. Classification is not only a great aid to the intellect by marshaling a chaotic mass of facts into orderly and meaningful groupings, but it is helpful in predicting and controlling the movements of facts. The moment we place a term in a certain class, we are in a position to apply with respect to it all the knowledge which experience has given us of the class concerned. Holding in mind a relatively small number of class names, or general terms, saves not only time, but also nervous energy.

4. The psychological feature of factual knowledge.—We are now ready for a brief survey of the psychological aspects of the process of description. The higher mental factors are, of course, involved, but sense perception is the process, in psychology, most closely related to the stage of description in scientific methodology. We shall discuss sense perception by arbitrarily dividing it into the constituent processes of sensation and perception. It must be understood that this bifurcation is only for the purpose of discussion, since in reality there is no such thing as sensation separate from sense perception.

To trace the development of the theories of sensation would be to go back to the earliest Greek philosophies. Heraclitus, the philosopher who proclaimed the doctrine of ceaseless change; Parmenides, the Eleatic, with his notion of ‘‘immutable permanence’’; and the atomists, with reconciling ontologies, had theories of sensation. Their doctrines were speculative rather than scientific, but it must be noted that they regarded mental states as referring to conscious phenomena resulting from actions of sense organs and bodily functions. They clearly distinguished between sensation and the higher processes, like imagination and reason. Aristotle, although a philosophical psychologist, had theories of sensation which were definitely anticipatory of empirical theories.

It is with theories of sensation as developed in empirical, or scientific—rather than in rational, or philosophical—psychology that we are now concerned. In all psychologies of empirical and scientific schools we find that sensations are differentiated from other states, processes, or reactions on the basis of their vividness and self-evidentness. They have an authority over mind, an insistence which makes their possessor take them as primary, fundamental, underived, and simple experiences. Treatment of sensation, like the treatment of other data of psychology, has changed with the progress of psychological theory from faculty to behavioristic doctrines. According to the faculty psychologist, sensations were the result of peculiar powers of mind. He did not deny outside stimuli, but did not believe that their power to impress end organs and to start nerve impulses would ever result in sensation without the aid of the inner sensation-making faculty. Kant and Wolff were faculty psychologists. Among the earliest of the empirical psychologists were the English associationists, Locke, Hume, Hobbes, Mill, Spencer, and the German, Herbart. To these psychologists sensations were the ultimate items, the smallest and simplest units which in combination or association with each other resulted in the complex ideas of higher thought. Their conception of consciousness was atomistic.

Following the association school came the structuralist school, which has had many representatives in recent times, notably Titchener, Ladd, Pillsbury, and Bentley. Sensation, to the structuralist, is considered as a content of consciousness. Its nature is to be defined in terms of its attributes. The attributes generally found in a conscious state called sensation are: quality, intensity, duration, clearness, and extensity. *Quality* is that feature which gives a sensation its intrinsic value; that is, that feature which differentiates it from all other forms of consciousness, as blue is distinct from green, sour from bitter, and so on. *Intensity* is the aspect of a sensation which permits it to be arranged on a graduated scale, as, for example, some medicines are more bitter than others. *Duration* refers to the temporal feature of a sensation. It must persist long enough to be recognized as a distinct, discrete quality. The duration is dependent in sensation upon presence of a stimulating object. *Clearness* is an attribute which represents the idea that sensations vary in definiteness as they are seen near or far, in bright or subdued lights. There is some doubt whether or not clearness is an attribute which in its varying degrees may be reduced to a difference of quality. Henri Bergson would make differences of clearness identical with differences of quality. *Extensity* refers to the spatial features of sensation. Sensations seem to have a voluminousness, as William James put it. Touch and vision have the feature of extensity, but it is doubtful whether or not this attribute applies to sensations of movement, taste, smell, and hearing. One thing is certain and it is that extensity of sensations applies only to surfaces and that notions of depth are not contributed by sensation alone.

The functionalists in psychology, as Wundt and James, also describe sensations in terms of attributes, but they emphasize the element of process in consciousness. A sensation, to a functionalist, represents an adjustment involving the whole of consciousness at the time of occurrence. A sensation is not passively received and received in piecemeal fashion, as the associationist and structuralist would have it. William McDougall, a functionalist, incorporates into the "total consciousness," which is the instrument of adjustment, an animistic "conative impulse," which gives the adjusting organism power and urgency. Two recent psychologies, to which we give considerable attention elsewhere, are behaviorism and the psychological theory of new realism. To the behaviorist, sensations are forms of bodily reactions to stimuli. Qualities, like red, soft, loud, and so on, are not revealed in consciousness by any process of awareness. The particular sensation, with its particular duration, quality or extensity, is identical with a vocal or subvocal reaction to the stimulus calling forth this particular response. Red is simply the organism's word-reaction "red." To look for any quality of redness in consciousness by a process called *introspection* is scientifically useless, if not intellectually false. The new realists believe that the sensed object is one with the sensing process. Known and knower are one in the sensing process. Sensation is the phenomenon which occurs when a physical object is compresent with a psychophysical organism. This theory is similar to the behavioristic conception that the object sensed is to an organism the organism's own reaction.

Perception is differentiated from sensation by the fact that in the former, ideational features are present. It is separated from other ideational states or processes by the fact that in perception an external stimulus is necessarily present. With the first appearance of life there may be pure sensation, consciousness without factors of memory, but after the first moment our conscious life is either perceptional or ideational. Perceptions are often defined as conscious states or processes, which are sensations with meaning. The sensory elements they contain are seen in their interrelationship; harmony of parts is recognized; relation of part to whole is appreciated. And again, not only qualities are discriminated, but purposes and uses of objects perceived are known. When we perceive an object, for example, a watch, we do not only become aware of an aggregate of qualities, like color, heaviness, shininess, and so on, but we also perceive the object as a definite thing, as "watch," a thing with name, a thing to keep time, a thing which costs money, and so on. The conscious state in perception is unitary, because of the integration of nerve impulses in the cortex, an integration, in turn, made possible by the coördination between neurones.

5. **The rules for proficient description.**—Good description results from good perception, and good perception is dependent largely upon the psychological process of *attention.* In the first stage of scientific procedure, therefore, what the scientist needs above everything else is the power to attend well. The rules for successful observation, definition, and classification, in kind, reduce themselves to rules for proficient attention. What then is attention, and how should it be carried on?

Attention has been a difficult phenomenon in psychological study because it has been so closely related to the problem of volition with its metaphysical and ethical implications. For psychologists who accept the ideomotor theory of behavior, the fight for free will is won or lost to the extent that we are led or not led to believe that definite ideas can be brought to the foreground of consciousness. Once the idea is there, the holder of the ideomotor theory contends that action is bound to result; ideas are dynamic and rush into movement. Attention is of three kinds: *voluntary, non-voluntary,* and *involuntary.* Voluntary attention is that which requires conscious effort on the part of the attender. The effort is not so much the bringing of new elements to the focal point of consciousness as the inhibition of irrelevant and interfering elements. Non-voluntary attention is that which we give when an intense stimulus attracts and excites us, as the sound of a tire blowout. We automatically attend to such a stimulus. Involuntary attention refers to the habitual attention which the sympathetic and autonomic systems require of their organs for the continuance of the body.

The rules for description grow out of the conditions which promote good attention. In perceptual attention the clearness of the object, its familiarity, its novelty, its motion affect greatly our interest in it and, therefore, the attention we pay to it. The attention we pay to ideas, our holding them in the focal point rather than in the fringe of consciousness, depends upon the intensity of the original sensation, its repetitions, its recency, and its compatibility with our general run of ideas. The physiological condition of the nervous system and the retentivity of the nervous tissue are of great importance in estimating abilities to attend. Out of these conditions of attention three important principles emerge with respect to good scientific observation. (1) *Have a burning interest in the problem at hand.* We can attend to objects much more easily if the objects have to do with a dominant purpose in our minds. Having an enthusiastic attitude toward the facts before us in observation gives us a keenness of perception and inhibits distracting interests. The maintenance of this zeal means, of course, that personal prejudices, memories resulting from past experiences, opinions of others, and considerations of private gain should influence the observer only to the degree that the interest which they stimulate makes him more ardent, persistent, and effective in his observations. (2) *Observe the facts under the best possible physical circumstances.* If possible, the object should not be moving too fast or too slowly for satisfactory observation. The light should be sufficiently bright for clear perception. The temperature of the object should be at a degree to allow the entity observed to be in its normal condition. Surrounding objects which would in any way alter the nature of the datum, unless the alteration itself is being investigated, should be removed. (3) *Keep the physiological instruments of observation at maximum efficiency.* Proficient perception is impossible by individuals suffering regularly from defective vision, faulty hearing, thwarted glandular activity, impaired digestion or elimination, or weakened lungs. Notwithstanding the examples of outstanding scientists with poor bodies, good health is a great asset to successful scientific work. Not only does good health make possible efficient organs of perception, but it also makes possible the happy state of mind necessary to successful work of any kind. At best our physiological instruments of observation are imperfect, but scientists reinforce the physiological insufficiency by mechanical aids. The microscope, telescope, stethoscope, spectroscope—these and many other devices extend the range and power of our end organs. Furthermore, in experiments, conditions can be effected in a laboratory which make possible great facility and fidelity in observation and in the recording of facts observed.

Before concluding the present section, it must be pointed out that science does not have a monopoly on the process called *description.* Journalists, artists, novelists, and others may profit by following the principles which make for consistently good attention.

B. EXPLANATORY KNOWLEDGE

Description deals with the text of facts; explanation deals with the context of facts. Description discusses the matter of facts; explanation discusses the meaning of facts. Description considers objects "apart from"; explanation considers objects "a part of." The term *generalization* is often used as a synonym for explanation. Inasmuch as for science causality merely means temporal and spatial relationship between facts and not the presence of some producing force like will or purpose, explanation is often the discovery of causal connections.

Whether it is because we are dominated in our thinking by a speculative propensity which keeps us from resting until we have related things to other things or whether it is because we are practically minded and desire to order the world of things in order to use them, it is true that the realm of facts is to us constantly a stimulus to our organizing abilities. We not only want to know the qualities of things at a particular moment of time; we want to know what these qualities generally are. We not only want to know what things are when we consider them by themselves; we want to know their properties as members of communities of things. In short, we want to know the laws of things.

An excellent illustration of the distinction between description and explanatory conceptions is afforded by a comparison of the work of Kepler and Newton. Kepler was filled with the idea that there must be some relation capable of mathematical expression between the different positions, previously determined by observation, in the orbit of the planet Mars. At length, after trying and discarding numerous other hypotheses, he was able to show that an ellipse could be passed through all these points. The proof was afterwards worked out for the elliptical character of the orbits of the other planets. The conception of an ellipse enabled Kepler to think all the observed positions of the planets in relation to one another. But the explanation of why the planets moved through elliptical orbits was still lacking. That explanation, as is well known, was given by Newton in his conception of universal gravitation. This was explanatory because it linked together the movements of the planets with the behavior of all other bodies moving in space, thus enabling the former to be thought as examples or instances of the action of a universal principle.[3]

We shall consider three stages in explanation: *analogy, hypothesis, law.* In each one of these steps intellectual activity leaps beyond the given facts. The method of induction is practiced in each case; that is, the present is discussed in terms of that which is not present and the single event is considered in the light of many events to which it is related; in short, an inference is made from the particular to the general.

1. **Analogy.**—Analogy is explanation only in the sense that there is an inference. A judgment is made, requiring verification, but the judgment is one which infers the presence of facts rather than the presence of laws or principles. In analogy particulars are related with particulars, rather than particulars with general notions. If X (a particular datum or fact) has the characteristics $A, B, C \dots$, and if Y (another particular datum or fact) has the same characteristics $A, B, C \dots$, by analogy we may infer that, if X has the property P, Y also probably has the property P.

For example, by analogy we may infer that, inasmuch as the Supreme Court of the United States and the World Court have many properties in common, the ability of the Supreme Court to prevent wars between the States indicates that the World Court will prevent wars between the nations. Again, if two football teams have coaches of about equal ability, players of the same merit, and schedules of about the same difficulty, we may infer, by analogy, that, if one is a successful team, the other will be successful also. Although analogy is an inference regarding fact situations and always relates to perceivable data, the resemblances and connections which it points out arouse questions which result in hypotheses that have to do with laws and principles. Analogy may not be explanation proper, but it leads to explanation proper. The interconnection between facts, disclosed in analogy, provokes the notion that something more fundamental and universal than facts themselves is involved.

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[3] J. E. Creighton, "An Introductory Logic" (1920), pp. 213–214. (By permission of The Macmillan Co., publishers.)

Analogy may only be used with profit when the resemblances between the facts involved are much more important in number and power than the differences. The person employing analogy must also be certain that the inferred characteristic, however significant the resemblances in the case may be, is not incompatible with the nature of the object to which, by inference, it is attached. The chief merit of analogy lies in its rôle of stimulating the observer who notices regular likenesses between phenomena to ascertain the general principle according to which the likenesses may be completely explained. Analogy does not require the creative imagination necessary in the process of hypothesis, but it demands a ''relating'' ability upon the part of mind not found in the process of description. In analogy it is not only necessary clearly to perceive properties of phenomena; it is also necessary to recognize that the properties in one object are similar or identical with properties in another. Anyone can notice the differences between things. The lowest animals have this capacity. It is only the intellectually capable who mark the respects in which the diverse features of their world are similar.

2. **Hypothesis.**—*Hypothesis* is a term with a wide range of meaning. Guesses, surmises, conjectures, speculations, theories, and beliefs have all been called *hypotheses*. Most of these terms, however, refer to very simple mental processes and represent tentative knowledge concerning matter-of-fact situations. Hypotheses, on the other hand, are not generally used in science to account for particular problems. They are used to explain the continuous occurrences of certain facts or the occurrences of several different, but related, facts. To guess that you will get four aces in a hand of bridge, or to surmise that the water in the basement came from a leaky cistern is not to make an hypothesis. Hypothesis, in the scientific sense, requires creative imagination. It means the construction of an intellectual product just as original as a great work of music, art, or literature. The nebular hypothesis, the evolutionary hypothesis, and the atomic hypothesis are illustrative of the amazing imaginative genius demanded in significant scientific hypotheses. It is the resulting conception, however, and not the original problem, which represents comprehensive and complicated thinking. The hypothesis-making activity may be aroused by the need to explain such ordinary affairs as the rising of water in a pump, the hardening of cement, the clotting of blood, or the decrease in the price of wheat. A tourist might explain the stopping of an automobile by guessing that the carburetor was clogged up. An expert would not be satisfied until he had learned why the carburetor could become clogged. In pushing his inquiries to find an explanation he would have to investigate the nature of gasoline, the quality of metal used in the engine, the behavior of the operator in accelerating the car, and other involved problems. His final hypothesis regarding the trouble could conceivably embrace questions regarding the hectic civilization of to-day, which made the automobile driver nervous and thus made him flood his engine. The electron-proton theory might be involved in a

determination of the materials entering into the constitution of the carburetor. A conception regarding the formation of the earth's crust might be included in an investigation of the gasoline. Hypotheses which really matter relate facts to the most general, most far-reaching, and most lasting principles of the world.

Various concepts have been presented as the most inclusive classes for the explanation of phenomena. God, mind, matter, force, energy, and personality are examples. These terms, however, are not serviceable for science. To say that lightning is an expression of deity, to say that volcanic eruptions are manifestations of force, to say that kindness is an exhibition of personality, or to say that attention is an evidence of will does not explain the phenomenon in question. They are verbal explanations, satisfying from the standpoint of emotional feeling, but they do not enable us to analyze the facts of nature. They are speculative explanations, dogmas, seeking to answer the question "Why?"; whereas science is concerned with the question "How?" Scientific laws are statements of the methods of nature's acting, not statements regarding absolute force, power, deity, or substance. Evolution, in science, is a way of acting, not a thing; gravitation is a way, not a force; the laws of motion are ways, not powers. The direction of scientific explanation is from the concrete to the abstract; the method of explaining by ending up with such notions as will, God, and the like represents just the opposite trend. The facts of sociology are explained by inclusion in the wider but less qualified class of psychology; psychological phenomena are explained by biology; biology, by chemistry; and chemistry, by physics. The most inclusive science, and also the most abstract and quantitative, is mathematics. An hypothesis which explains a fact in terms of mathematical equations lacks the interest and inspirational quality found in such notions as God and personality, but it has an accuracy, a communicability, and a practicability altogether lacking in the ideas of speculative sentiment. *The less an hypothesis takes for granted, the closer it is to observable phenomena, the more useful it is in predicting and controlling nature, and the more certain it is of verification, the more meritorious it is as a mode of scientific explanation.*

In considering hypotheses, we are, for the first time, in the process of knowledge called *reflection.* This intellectual activity has been made somewhat famous in philosophy and in science by the explanation of thought given by the pragmatists, especially by John Dewey. For the pragmatic thinkers, hypothesis is the central factor in knowledge. It betokens for them the tentative and creative features of intelligence. As we shall see later, truth for the pragmatist is not eternally set and absolutely authoritative. Truth, as William James put it, is something which "happens to ideas; ideas become true"; their truth is proportionate to the success with which they enable the thinker to solve the different difficulties which prevent him as a biological organism from obtaining the most abundant life in his environmental situation. For Dewey, hypothesis is the climax of the complete act of thought, the third step in his five-stage logical process. The steps in the full movement of a reflective process are, according to Dewey: (1) the occurrence of a difficulty; (2) definition of the difficulty; (3) occurrence of a suggested explanation or possible solution; (4) the rational elaboration of the tentative idea; (5) corroboration of the idea and formation of a concluding belief.[4] In the range of thought from the awareness of the problem to the recognition of a true solution the two great modes of thinking occur, namely, induction and deduction. Induction appears as the first two steps lead into the third, as thought moves from particular facts to general ideas; deduction occurs as the third stage leads into the last two, as the implications and bearings of the tentative solution are developed.

Hypothesis may be conceived as being more than a knowledge device to enable man to meet his problems, however significant these problems may be. We would consider hypothesis itself in terms of its nature rather than in terms of its function. Noticing the dynamic and prospective character of hypothesis, we would suggest that reality is an unmade, progressing being. Logically, we believe, it is just as legitimate to conceive of the universe in terms of the activity aspect of hypothesis as to interpret it in terms of the set and orderly notions to which hypothesis leads. This notion that the cosmos itself follows a reflective procedure, that the cosmos makes hypotheses and verifies them just as does man, does not mean at all that our world does not know where it is going, that reality is a ''trial and error'' affair; what it does mean is that the universe is a ''going concern,'' that it has hopes and ideals and interests. We cannot have faith in our world unless the world itself is a being in which faith is a rational and natural activity. We would endorse the conception that not only when we discover laws are we thinking God's thoughts after him, but that when we make hypotheses we also carry out an intellectual procedure which deity itself enacts on a grander scale.

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[4] See John Dewey, "How We Think," Ch. VI. (D. C. Heath and Co., 1910.)

3. **Law.**—When an hypothesis has not been verified beyond all doubt, when other solutions also might perhaps explain the problem in question, but when the hypothesis presents a plan of action which is workable in predicting or controlling facts, the hypothesis is called a *theory*. When an hypothesis is not only workable, but is the only one which competent investigators agree can explain the facts, then it is called a *law*. An hypothesis which is graduated into the status of law points out a universal relationship between the phenomenon to be explained and the wider body of facts of which the phenomenon is a member. Often, for those who do not understand what law means in science, there is behind the idea a deductive type of thinking which gives to law implications which the scientist ignores. Laws, of course, are arrived at by starting with particulars

and then going to general principles, but many make the tacit assumption that general principles somehow or other regulate the behavior of the particulars; the constancy, universality and predictability of facts is thought to be an inevitable consequence of their inclusion in classes, controlled by necessary and unchanging rules. Laws may be determiners of particular events, but such an interpretation of laws is metaphysical and speculative, and goes beyond the conception of laws in science. Law in science is a different thing from law in theology and jurisprudence. In both of these latter disciplines law is thought of as something to be obeyed; duty is implied upon the part of those to whom the law refers. In theology the laws are decrees of a supernatural being or of a representative of deity with special divine prerogatives. In jurisprudence, the laws may be the result of long experience in a tribe or nation during which experience the members of the societal organization have discovered by trial and error what rules are most conducive to the welfare of the group; or in jurisprudence the laws may be regarded as ordinances presented to the people as the deliberate request of a ruler or legislative body.

In the cases of laws in religion and government the problem of sanction arises. People raise the question as to why individual liberty should be restricted and social requirements levied. Man must be shown some reasonable ground for surrendering his own interests to the will of God or the state. In the long run, if the sanction for altruism seems unjust, man will rebel and refuse to conform to these external authorities. In the case of scientific law, or natural law, as it is sometimes called, rebellion would be a foolish procedure. The laws of nature cannot be conceived of as unjust because they cannot be conceived of being unreasonable, and they cannot be regarded as unreasonable because our very idea of reasonableness comes from our search for those facts and principles which conform to the ways of nature. It is of course true that for practically all religions

God is the creator of nature, but it is nevertheless true that no people will long worship a God whose dispensations conflict with the principles which man, at his highest stage of intelligence, has found to be the laws of nature. It is again true, of course, that scientific investigation necessary for the discovery of natural laws would be impossible without a state to maintain, or at least protect, the educational process, but, this dependence upon the state notwithstanding, no group will long tolerate a government whose rulers require activities which contradict the laws of nature. In spite of this high station enjoyed by natural laws as the norm of reasonableness in religious and governmental disciplines, laws in science are *descriptive,* not *prescriptive.*

For the scientist laws are human constructions, presenting in the form of brief formulas the various ways in which nature behaves in comparatively regular and routine fashion. Indeed, scientific laws, the laws of the physical as well as the social sciences, are often regarded now as statistical averages. For science, laws are epistemological rather than ontological. As has already been pointed out, the scientist, as a scientist, is an agnostic and from his purely scientific interest he does not concern himself as to why the sense perceptions which he explains as having a uniformity of occurrence happen as they do. To science, as such, the uniformity of phenomena may be considered as due just as much to the sameness of the apparatus for sense perception in men as to any constancy of events in the external world. In short, for the scientist, the laws of nature are laws of man's own experiences; his experiences are his facts. The scientist, as a scientist, is a phenomenalist; his purpose is to explain phenomena, and phenomena are merely the modes of matter or mind that manifest themselves to him in sense perceptions. When he knows the interrelationships between the sense data, when he can organize them into classes, show the order of their occurrence, discover which ones are the usual antecedents of others and find out which are the invariable consequences of certain others, then his aim is realized. The scientist is interested in temporal or spatial correlation or both. To him, as we have indicated, causality does not mean effort or will on the part of one fact to produce others. Causality is merely the statement of a togetherness of facts, or of the relation of before and after between facts. When the description of togetherness or of succession represents a state of affairs which occurs with sufficient regularity to justify prediction, then the descriptive explanation has the status of law.

The scientist is not satisfied to discover regularities in specific fields of phenomena. He is eager to find that the special fields are parts of wider operations of nature. He is not satisfied, for instance, with the laws of psychology, as such. He wants to ascertain whether or not the laws of psychology are not aspects of biological laws. The biological laws he would include in the laws of chemistry and physics. The norm of the scientist is to arrive at mathematical formulas, according to which the behavior of facts in any field might be explained. To explain the activities of societies, of selves, of animals, plants, rocks, atoms, all in terms of the laws of motion, such would be his ambition. It is because of this zeal to reduce concrete being to mathematical form that scientific laws are called abstract. They possess accuracy and universality, but they give no hint of the richness and the interestingness of the things whose behaviors they explain. To retain in knowledge the variety and fulness of the objects known is to carry on the intellectual process called interpretation. Let us pass to an examination of this type of knowledge.

C. Interpretative Knowledge

Explanation, as we have noticed, tells us how the things observed in description behave; interpretation tells us why they act as they do. In interpretation we come to the first stage of intellectual activity which can truly be entitled philosophy. For in interpretation we for the first time go beyond or beneath the facts to ascertain what kind of a universe ours is to make these facts and their interrelationships possible. We shall not, however, consider the solution to the problem of ultimate reality at this point. Answers to this fundamental question constitute our treatment of the ontologists, a treatment which requires a complete chapter for discussion.

Not only are we concerned in interpretation with what underlies the world of facts; we are also interested as interpreters in finding out what relation the world of facts and the realm of ultimate reality bear to our own selves. In description and explanation knowledge is impersonal; in interpretation the personal implications of knowledge are freely admitted and definitely developed. What does the world mean to man? Is it a good universe, or a bad universe? Does it have a purpose, or is it a blind machine? Is there a God, or is the idea of God a myth? Are truth, goodness, and beauty human constructions, inventions of man's mind for the purpose of expediency, or are they principles inherent in reality itself? Just to state these questions, which are the concern of interpretation, is to show that they are too important to discuss here and now. Their treatment is the subject of several individual chapters in the present work.

There is, however, one theory of interpretation which we should like to consider rather briefly in this section. It does not deal so much with the principles arrived at by interpretation as with the interpretative activity itself. We refer to the doctrine of interpretation propounded by Josiah Royce. No conception of interpretation shows more clearly than Royce's how complete knowledge must involve an understanding of what goes on in mind as well as an understanding of what goes on in the world outside of mind. As we pointed out in case of hypothesis that the cosmos itself is an hypothesis-maker, Royce develops a theory of interpretation to suggest that the universe is the great interpreter.

According to Royce, as he develops his theory in "The Problem of Christianity," Volume II, there are three methods of reaching knowledge: *perception*, *conception*, and *interpretation*. Admitting that no philosopher wholly confines himself to one method, Royce represents Bergson as the exponent of the perceptual method; Plato as the exponent of the conceptual method; and Kant as a philosopher who finds knowledge in the synthesis of perception and conception. As long as the objects of knowledge are data, things, universals, and abstract characters, these two methods will suffice. But how can perception and conception afford knowledge when the object is your neighbor's mind? Interpretation is the method whereby we obtain knowledge of others' minds or of our own mind. The object of knowledge by interpretation may be mind, or just a sign of mind, as a written message. Community depends upon our social relations, and interpretation is necessary in all such relations. Besides, in the understanding of others we employ interpretation in the understanding of ourselves. Interpretation involves three terms: the interpreter, the object, the person interpreted to. An example of interpretation would be that of a student translating a passage in Latin for a friend. The interpretation of one's self involves the past, present, and future selves of the individual, as when a person, upon the basis of past experience promises in the present to do something in the future.

There are three differences in interpretation from perception and conception. Interpretation is a conversation; its object has the nature of a mental expression; the interpretation is itself a mental expression or sign which calls for further interpretation; hence interpretation is unlimited. The understanding of one another through interpretation is the basis of community. Interpretation is essentially a social process. Metaphysically considered, the world of interpretation is the world in which we learn to acknowledge the being and inner life of our fellow man; and to understand the constitution of temporal experience, with its endlessly accumulating sequence of significant events. This process, which transcends perception and conception, is the process in which you engage whenever you counsel with a friend or serve the cause of your life. The interpreter is aiming at an ideal event—the spiritual unity of the community. If I am to be an interpreter at all, we three—you, whose mind I would interpret, you, my listener, and I myself constitute a community of interpretation. We are to each other a realm of ideas. All three have one goal, —to interpret each other as vividly as we interpret our own selves to find the interpretation which an ''all-seeing'' would make to observe the unity which this observer sees. The divine is the interpreter who interprets all to all, and, in the will to interpret, the divine and human selves are in closest touch with each other.

Interpretation can never be for human beings a realized type of knowledge. As Royce has asserted, the only real interpreter is God. In other words, interpretation is largely speculation, and we must confess that, for finite minds, our solutions of the fundamental problems of God, nature, soul, life, mind, and so on can never be final or certainly true. But if truth is infinitely large and infinitely remote, nevertheless our speculations are increasingly comprehensive, coherent, and constructive, and the quest for truth ever remains man's most sublime and stimulating pursuit.

D. Conviction and Appreciation

We have said that conviction and appreciation are not types of knowledge coördinate with description, explanation, and interpretation. They are rather properties of these other three intellectual activities. We would suggest that conviction represents the volitional or conative aspect of knowledge and that appreciation is significant of the emotional or effective aspect of knowledge.

We can have convictions or appreciations or both, in any stage of knowing, from the simplest perceptional experience to the most abstruse speculation. Conviction represents the attitude of endorsement of the validity of our descriptive, explanatory, or interpretative processes. We can have convictions about facts, laws, or principles. *When our convictions represent our zeal for principles arrived at in the philosophical act of interpretation, we call them beliefs.* Beliefs, since they involve the personal interests always found in interpretation, are the intellectual assurances which give our lives meaning and strength. Our problem as students of philosophy is not to make our beliefs less forceful, but to make them more true.

In appreciation we make judgments of value, not regarding the logical legitimacy of facts, laws, or principles as in conviction, but regarding the worth of these intellectual products. Appreciation is another word for *estimation.* We can have convictions regarding objects which we deplore; appreciations always imply a judgment on our part that the appreciated objects are desirable. Conviction represents an attitude of assent which is provocative of practical activities; we want to express our conviction; we want to carry out our beliefs. Appreciation is more quietistic; when we appreciate we are satisfied to contemplate the mere beauty and order of facts, laws, or principles without rushing into some overt behavior in their interest. Conviction represents the moral purpose in our intellectual life; appreciation is significant of the artistic element in thought. We shall come across the moral and esthetic interests later in our treatment of axiology.

Repeatedly we have said in the present chapter that the intellectual process and the contents of knowledge may be discussed without raising the question as to whether the known is in mind or in matter or in both or in neither. Let us now pass to a consideration of the relationship between the known as a part of our experience and the known as an objective entity independent of the knowing process. In short, we are ready to discuss the relation of knowledge to reality, that is, the relevancy of knowledge.

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CHAPTER VII

THE RELEVANCY OF KNOWLEDGE

WHEN we know, do we know the physical object as it really is, or do we know a copy or image of it in our mind? Where are the primary qualities and secondary qualities, in mind or in matter, in neither or in both? What is the relation of the epistemological and the ontological? Are ideas and things mutually exclusive, interdependent, or identical? These questions suggest the nature of our present concern. The problem of this chapter must not be confused, however, with the body-mind problem, which is more comprehensive in scope and deals with the whole personality and not merely with the self as a knower. The body-mind problem, with its questions regarding the nature of mind and its debate with respect to the teleological aspects of selfhood, receives attention in a later chapter.

Theories concerning the relation of knowledge to reality.—In presenting doctrines which treat this problem we are assuming that knowledge does refer to an objective existence. We take it for granted that man can know, however faulty his knowledge may at times be. We, therefore, are treating *skepticism,* in the present connection, as one of the minor theories. The skeptic, in denying that knowledge is possible, would consider the whole discussion of the present chapter idle. Skepticism is so grossly guilty of violating its own standpoint, however, that its affirmations need not be taken very seriously. In dismissing skepticism, however, we are not advocating its opposite, *dogmatism.* Dogmatism suffers from just the opposite defect of skepticism. The dogmatist is so sure that his knowledge represents reality that he fails to regard with sufficient carefulness the manifest errors in his thought processes. Skepticism is the point of view of a man who thinks that the first step in philosophical reflection should be the last; dogmatism is the attitude of a man who thinks that the last stage in philosophical speculation should be the first. The skeptic and the dogmatist are both guilty of avoiding the long, tedious journey which other thinkers take in passing from the awareness of a provocative problem to an appreciation of its successful solution. The skeptic is too pessimistic about that which we do not know; the dogmatist is too optimistic about that which we do know. The skeptic is amazed that anyone could hope for an answer to the problem of the relation of knowledge to reality; the dogmatist is astounded that anyone should even doubt that a perfect answer has not been given. Needless to say, both doctrines betray a deplorable lack of the critical approach characteristic of genuine philosophical thought.

The conceptions which consider the problem of the relation of knowledge to reality deserving of thoroughgoing philosophical reflection are: *epistemological dualism, epistemological monism, epistemological criticism, epistemological evolutionism,* and *objective experientialism.* The adjective *epistemological* is important, because there are dualistic, monistic, critical, and evolutionary theories in metaphysics as well as in epistemology. Each of the first four doctrines is expressed in two forms, depending upon whether the emphasis is realistic or idealistic. That is, in epistemology, we have realistic and idealistic dualisms, realistic and idealistic monisms, realistic and idealistic critical doctrines, and realistic and idealistic evolutionary theories. We mean that a conception is realistic when it favors the notion that the object of knowledge is independent of the knower. To the realist, an object of knowledge can exist in reality whether it is being known or not. We mean that a theory is idealistic, if it supports the contention that in experience the object known is dependent for its being upon its being known. To an idealist an object cannot have a real existence unless it is a part of some conscious experience. This definition refers only to epistemological idealism; idealism as an ontology has other significances which need not be suggested here. Let us now examine the four main doctrines which treat of the relation of knowledge to reality, bringing out the realistic and idealistic expressions of each, and suggesting the point of view, objective experientialism, which we believe to be the best solution of the problem.

The following outline will anticipate in concise form the theories to be treated in the present chapter. It must be recognized that other phases of these doctrines are treated elsewhere. Our immediate interest is the way in which these standpoints deal with the problem of the relation of knowledge to reality.

I. Epistemological dualism.
    A. Presentational realism.
    B. Representational realism.
    C. Personal idealism.
II. Epistemological monism.
    A. Pan-objectivism.
    B. Pan-subjectivism.
    C. Neutral monism.
III. Epistemological criticism.
    A. Critical realism.
    B. Phenomenology.
    C. Transcendentalism.
IV. Epistemological evolutionism.
    A. The theory of emergence.
    B. The theory of pragmatism.
    C. The theory of immediateism.
V. Objective experientialism.

I. Epistemological Dualism

A dualist in epistemology is one who holds that experience has two features which are entirely different in nature and function. He divides experience into the distinctly separate realms of subjective and objective. Neither element depends in any way upon the other for its existence or its value. The subjective feature is known by introspection; the objective feature by observation. The subjective element constitutes the data of psychology; the objective side embraces the phenomena of physics. The former, in short, is the world of consciousness; the latter, the world of which consciousness makes us aware. Dualism, in other words, believes in mind and matter as independent, but interacting, entities. What is mind? No matter. What is matter? Never mind. But mind matters, and matter minds. Here in pun form are the essential tenets of dualism. One must remember, however, that mind and matter may receive various definitions and the principle of dualism still be valid. Mind may be interpreted as physical, as in behaviorism, and matter may be construed as spiritual, as in some versions of modern physics, and the principle of two separate aspects to experience may still be maintained. In dualism, the agency of knowing may just as legitimately be the physiological organism as a psychological soul; the object of knowledge may be a law, a principle, or a postulate just as feasibly as it may be a physical fact. What dualism insists upon is that the subject cannot be identified with the object and that the object cannot be considered as one with the subject. This insistence upon discreteness between the outside and the inside features of experience makes it inevitable that the only epistemological doctrine which could be called *dualism* would be one which treats mind and matter as not only distinct from the standpoint of function, but as also distinct from the standpoint of their nature. Consequently, although all epistemologies, whether of the materialist, who reduces all entities to matter, or of the idealist, who reduces all entities to ideas, are dualistic in the sense that some separation is necessary between the perceiv*ed* and the perceiv*ing,* the term *dualism* is reserved for the doctrine which considers the perceiv*ed* and the perceiv*ing* as qualitative opposites.

This tendency to restrict the term *dualism* to interaction between mind and matter as two antithetical substances discloses the influence of the straightforward and unambiguous dualisms emphasized in religion and ethics upon epistemological theory. The disposition to bifurcate experience into mind and matter reflects the theological concern to make such dichotomies as God and the Devil, the flesh and the spirit, heaven and hell. We cannot deny the force of these dualisms; they do signify pertinent features of our experiences. The philosophical task is to ascertain whether or not these dichotomies may not be reduced to unitary principles. To settle the question whether mind and matter, as recognized in epistemological dualism, bespeak a universe that in its fundamental nature has two mutually exclusive substances, is, however, the burden of the ontological discussion later on. Our immediate problem is to consider critically the theory that in knowledge, whatever be the situation in ultimate reality, mind and matter are two separate, but interacting, entities. What are the conceptions which espouse this thesis of epistemological dualism, and are they conceptions which are logically tenable?

The types of epistemological dualism.—There are three types of dualistic epistemology: presentational realism, representational realism, and personal idealism. Let us observe the main features of these dualistic doctrines.

A. PRESENTATIONAL REALISM

Before entering into a discussion of representational realism a word should be said concerning presentational realism or the naïve type of dualism which is preparatory to and provocative of the more sophisticated dualistic theory. Representational realism is a sophisticated expression of our ordinary view of the relation of knowledge to reality. It is a philosophical conception which recognizes the validity of common sense, but tries to overcome the defects in the interpretation made by the man in the street. Most people are *naïve dualists,* or, to use the term of Professor R. W. Sellars,[1] *natural realists,* and have yet to reach the stage of reflection in which an understanding of representational realism occurs. In other words, to the ordinary individual, the outside world is just as we perceive it; the subjective realm is the agency by which we get into contact with the external. It is a realistic point of view, because, although the unphilosophical person does believe in both mind and matter, he emphasizes the material or external aspects of experience. He knows that he has a mind because he is aware of its presence when he feels, thinks, hopes, wills, and imagines; he is certain there must be a mind, or how else could he account for memories? His main interest, however, is not in his memories or other internal processes; to the man in the street the real world is the domain of physical things, houses, automobiles, streets, fields, bank-notes. Things like these seem to common sense to possess a permanence, certainty, and authority altogether lacking in mental factors. A frequent and not inappropriate word for this attitude toward the world is ''horse sense.''

The time must come, however, when ''horse sense'' will not satisfy a human being's intellectual requirements. He learns that, if he adheres strictly to naïve dualism or natural realism, he will never know even the outside realm as it really is. ''Seeing is believing,'' to be sure, but often seeing is believing falsely. Common sense tells us that the world of perception is the real world, but perception fools us so frequently. What is the real orange? The orange we see as very large when close to our eyes or as very small fifty feet away? The orange we see as gray in the twilight or as truly orange in a white light? The orange which tastes delicious when our appetite is good and our health is fine, or the orange which tastes so unpleasant when we have a very bad cold? Not only do our own perceptions differ with each other; they also contradict the perceptions of other people. How we disagree as to the taste of olives, about the size of the moon, the pleasurableness of talking pictures as compared to silent pictures! Our past experience and training have so much to do with the way we perceive the things about us. To persons brought up in a cultural atmosphere opera is a delight; to others, who have never been instructed in the appreciation of good music, a night at the opera is almost painful. The fact of the matter is that the ordinary man, in spite of his insistence that we should take things as they really are, lives in a world that represents a great deal of modification and construction on the part of the mind. The orange which he perceives would be a chaotic mass, did not mind synthesize the perceptions of shape, color, taste, smell, and so on in a significant unity. Everything which he perceives, he perceives in the light of ideational features of consciousness which enrich the perception of the moment; how much more we see in our automobile engine when we examine it three years after the observations made the day of its purchase!

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[1] See ''Principles and Problems of Philosophy,'' Chs. III, IV. (The Macmillan Co., 1926.)

If naïve dualism were true, there could be no such thing as error; our world would be a changing, contradictory, many-sided ''pluriverse,'' but, since perceptions would be the only test of truth, we could not do anything else than call the objects of our seeing, hearing, tasting, smelling, and feeling true. The most unsophisticated individual, however, has a sense of error, a sense that is not sense at all, but a judgment involving the higher mental processes of comparison and verification. We say that things in the outside world are false only when we have a standard of truth, and a standard of truth is always the product of reflective mind or minds. To put the breakdown of naïve dualism another way, we may say that presentational realism gives way to representational realism. The emphasis is still realistic, but the mental factor is ascribed its true importance. Presentational realism, or natural realism, is extremely empiricistic; representational realism is predominantly empiricistic, but rationalistic features are significantly present. What, now, is representational realism?

B. REPRESENTATIONAL REALISM

To discuss representational realism is to discuss the epistemological theory of John Locke (1632–1704).[2] Locke is realistic and empiricistic in that he asserts that there are no such things as innate ideas, holding that mind, at its beginning in an individual, is a blank tablet, upon which experience imprints all the ideas which we receive. Knowledge comes in two ways: by sensation, which gives us knowledge of external objects, and by reflection, which gives us knowledge of internal operations. Sensation represents an observational method and reflection is introspective, but both effect the simple ideas out of which all kinds of knowledge must be constructed. In the receiving of ideas Locke treats the mind as passive, but in the combining and organizing of ideas, the mind, to Locke, is active. Knowledge is the recognition of agreement or disagreement between ideas. In other words, the world of knowledge is a copy of the objective, other than mental, world. The intuition we have of the soul, the logical demonstration we have of God, and the sense awareness we have of nature are too meager to be truly called knowledge. What right have we to call Locke a dualist? He seems to be rather a supporter of the theory which is defined as phenomenalism. Yet Locke *is* a dualist, in that, although he does not call the realm of nature a realm concerning which we can have definite knowledge, he does presuppose such a world as the ground of our perceptions. He does believe in matter as well as in mind, in bodies as well as in ideas. Furthermore, he holds that bodies have certain characteristics which are in them whether we perceive the bodies or not, namely, the primary qualities. Our ideas of extension, motion, number, figure, solidity, and rest are copies of actual features of external material objects. Bodies produce our ideas of the secondary qualities, but the secondary qualities are not prototypes of patterns in the bodies. Primary qualities are permanent; secondary qualities change as conditions of our perceptional experience change. Locke goes beyond common sense in showing that the objective entities are not as we see them at all; the real orange, the orange external to our perceptions, is an orange whose characteristics are only spatial properties, mass particles giving the orange its solidity, shape, rest, and extension, and providing the casual agencies for the production of the orange's secondary qualities of color, smell, taste, and smoothness. Locke is rationalistic and idealistic in locating secondary qualities in mind; he is empiricistic and realistic in locating primary qualities in outside nature. He accounts for error by making knowledge the product of mind which might combine ideas wrongly; he escapes skepticism by holding to an objective reality of unchanging structures. How the objective and subjective realms can be brought together, how the primary and secondary qualities are joined, Locke admits to be an insoluble mystery.

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[2] See "An Essay Concerning Human Understanding." (Open Court Publishing Co., 1905.)

C. PERSONAL IDEALISM

For the dualism just discussed, the ultimate ground of our perceptions is outside of consciousness. For the dualism now under consideration, that espoused in personal idealism, the fundamental basis of our perceptions is consciousness itself. *Mind is the datum.* This is a standpoint which was first propounded by Rudolph Hermann Lotze (1817–1881) and has been espoused in one form or another by Professors George Howison, James Ward, W. R. Sorley, William James, C. Renouvier, L. W. Stern, M. W. Calkins, B. P. Bowne, E. S. Brightman, R. T. Flewelling, and A. C.

Knudson. Its chief exponents in America have been Bowne and Brightman. Personal idealism, or personalism, is really the philosophical descendant of Berkeleyan idealism, and the personalist, like Berkeley, is concerned to show that God is the primordial substance, that matter is not real, and that universals and laws are generalizations from particulars. There is a distinct religious import to personalism, with its insistence that ideals are not human utilities, but revealers of reality's objective structure, and with its zeal to show that the self is a free, moral, and immortal agent. Our present interest, however, is in the dualism of personalism. The personalist believes that idea and object are two separate entities in an individual's experience. An examination of any feature of experience must start with immediate mind, or self-experience, but this does not mean that mind is identical with its environment. As E. S. Brightman asserts:

> In being the datum, the self is not shut off from knowing or interacting with the rest of the world, even though it does not literally contain any of that world or exchange any parts with it. The datum is private only in that it *is* itself and nothing else. My mind can never be nor contain anything except itself; yet it certainly can know and be known by, affect and be affected by, what is not itself. I am always in contact with my environment without ceasing to be myself. . . . It is true that I must experience myself only; it is equally true that I must infer a world if I respect reason. That there is communication between my mind and other-than-my-mind is just as certain, although not just as immediate, as the fact that my mind exists at all.[3]

Ontologically, the personalist is a subjective idealist; the knowing mind is a substance which cannot be reduced to any other entity; it is immediate, individual, and intrinsic; it is, for each person, his ultimate reality. *Epistemologically, however, personalism is dualistic,* because it holds that outside of the self-experience there is the environmental situation, which, if Brightman may be taken as the spokesman of the doctrine, includes the subconscious, logical, and metaphysical, as well as the biological, physical, and social contexts of mind. The fact that the environmental factors are mediate, rather than immediate, inferred rather than intuited, makes them none the less actual. The reality of the environmental is vouchsafed by the creativity of God; what is nature to us is, says the personalist, God's will in action. For the personalist the non-mental realm is inferential; it is not an object of immediate experience. It is, however, as existential as the physical world of the naïve dualist.

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[3] "A Philosophy of Ideals," pp. 34–35. (Henry Holt and Co., 1928.)

As was said above, we cannot think of experience at all without regarding it in terms of subject and object. We may make one of the two elements merely a by-product of the other, or we may make them two phenomenal aspects of a third entity, which is the reality, but the problem of how the knower knows the known still remains. In dualism the problem seems more difficult because the natures of the subjective and the objective are so different. Upon what grounds can we believe that there are two distinct substances, mind and matter, and what reasons can we give to show that they interact? To answer these questions would involve us in a critical examination of the dualist's theory of reality. We shall, therefore, postpone our criticisms of dualism until we have taken up the viewpoint as it is presented in ontological theory. The legitimacy of the two forms of dualism, the realistic and the idealistic, will also receive further consideration when we study the ontologies of realism and idealism.

II. Epistemological Monism

The epistemological monist admits that the subject and object in knowledge seem to be numerically separate, but he stresses the fact that they "seem" to be so and argues that in reality they are numerically one. To the epistemological monist dualism leaves us in a tragic situation; it bifurcates reality into matter and mind and then fails to tell us how the two are brought together. Dualism, the critic declares, makes of experience a mysterious miracle-worker. Epistemological monism holds that the world of ideas and the world of things are the same world; the subjective and the objective are identical. There are two phases of this theory, depending upon which side of experience is telescoped into the other. There is a realistic epistemological monism, and there is an idealistic epistemological monism. We shall call them, respectively, *pan-objectivism* and *pan-subjectivism*. The former subordinates the realm of ideas to the realm of things; the latter doctrine regards things as certain types of ideas. Let us notice the two points of view in more detail.

A. Pan-Objectivism

This theory, which treats mind as subordinate to the world of matter, has two forms. In the first place, the doctrine has a logical aspect, growing out of analyses of the fundamental characteristic of reality, which support the notion that when an object is perceived or thought, the object itself and not an ideational representation of it is in our experience. This conception is sometimes called *the relational theory of mind.* In the second place, pan-objectivism has a biological aspect. It is espoused also by those who, by experimentation and observation, have come to regard mind exclusively as a physiological function. This second type of pan-objectivism is *behaviorism.*

1. **The relational theory of mind.**—This phase of the doctrine of pan-objectivism, that objects known are themselves identical with the content of knowledge, that we know external objects and not internal subjective states of mind, is called by R. B. Perry, the theory of immanence.[4] According to this point of view, consciousness is out there where the things to which we respond are. Its chief expo-

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[4] See "Present Philosophical Tendencies," Ch. XIII. (Longmans, Green and Co., 1912.)

nents are those in the school of new realism who are most radically opposed to the traditional tendency to exalt mind in philosophical interpretation. A novel expression of the thesis is that of the realist, E. B. Holt, who treats consciousness as a cross section of the universe, selected by the nervous system. Consciousness, for Holt, is like a searchlight which plays over a landscape and illuminates the various objects upon which its light falls. The objects in the part of the environment upon which the light plays are not dependent in any way for their being upon the searchlight or the illumination; similarly, objects selected for attention by a knowing organism are clarified, not constituted, by the selection.[5] For Holt, errors, volitions, imaginations, and memories are considered just as objective and independent of mind as the facts of sense perception.

Pan-objectivism regards consciousness as a mere relation which exists between a known object and a knowing subject. In short, it is a name for the situation of *compresence* which occurs when a perceiving agent and a physical thing are in the same environmental field. For the radical pan-objectivists mind is no more a substance and no more a container of mental entities when the objects of knowledge are intellectual affairs, such as laws, principles, and so on. For the radical objectivists, similarly, the intellectual objects are no more dependent for their being upon a constituting mind than are things in the realm of sense perception. As F. J. E. Woodbridge points out, to know the physical world "does not convert it into autobiography."[6] According to the pan-objectivism held by those in the school of recent realism, the entering of an object into consciousness is but one of many situations into which it may pass and from which it may freely withdraw.

It must be recognized, however, that the pan-objectivists, in spite of their zeal to rid the knowing self of its mental character, do acknowledge that the relation which does hold between the known and the knower is due largely to the activities of attention, selection, and interest displayed by the individual which knows. The majority of pan-objectivists also are willing to grant that in the knower there is also an indispensable element of experience known as awareness. The objective reference of this awareness, its content, of course, is to be found in the realm external to and independent of the field of awareness. The implications of the standpoint of pan-objectivism are developed later in discussions of realistic ontology and psychology.

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[5] See "The New Realism," p. 353. (The Macmillan Co., 1912.)

[6] *Journal of Philosophy,* Vol. II, p. 125.

2. **Behaviorism.**—Like the first theory, the second type of pan-objectivism, or behaviorism, denies any existence to consciousness as a unique reality; the mental is one feature of a world wholly interpretable in terms of the physical sciences. According to behaviorism, perceiving, remembering, thinking, all so-called mental processes are reactions of the bodily mechanism; at any rate, so far as these processes are the subject matter of scientific psychology. The behaviorist is interested only in the observable actions of man. Such concepts as consciousness, self, ego, and spirit are philosophical in import and only hinder a scientific explanation of human activity. Introspection is admitted only to the extent that, as a method, it discloses the nature of some bodily movement. Behaviorism would consider the life of man wholly in terms of two factors, the *stimulus,* or determinable conditions of human action, and the *response,* or controllable behavior which the stimulus situation provokes. Both of these factors are completely explainable by methods of empirical science. We shall meet with behaviorism later in our consideration of the various theories of mind and soul.

B. Pan-Subjectivism

As pan-objectivism seeks to solve the problem of the relation of knowledge to reality by reducing mental activity and mental content to material forms, contrariwise pan-subjectivism attempts to arrive at a solution by reducing the physical features of experience to mental characters. Pan-subjectivism holds that it is impossible to go beyond experience as a state of consciousness in some being's mind. Nothing exists which is not in the mind of an infinite or a finite knower. There are two forms of this idealistic epistemological monism: one is the epistemology held by those who, in ontology, espouse subjective idealism; the other is the doctrine of those who, in ontology, are absolute idealists.

The standpoints of subjective and absolute idealism.— The subjectivists emphasize the activity side of experience; the center of existence and value lies in the knowing agency; the knower is more real than the known. The absolute idealists stress the content element in experience; the knower is secondary to the known, except in the case of the absolute or universal knower, who is identical with the absolute and universal known. To put the situation another way, subjective idealists are concerned to interpret the origin of things in terms of mind; absolute idealists are interested in interpreting the nature of things in terms of mind. The world, to the absolute idealist, is not mental because a mind has originated it by thought. The notion of mind arises rather to account for the meaningful unity inherent in the world. The absolutist does believe in knowers who know the world in part, and in a universal knower who knows it in full, but these knowers are identical with, rather than antecedent conditions of the known. God is not the producer of the system of thoughts; he is the organic whole of ideas. The finite knower realizes selfhood, not by intellectual creativity or originality, but by training his mind to follow the leading of ideas that appear to him; personality is increasingly his as he more and more assimilates in his thought life the great organization of meanings, which is the infinite self. So far as finite knowers are concerned, absolute idealism is realistic; the objects of thought transcend the finite consciousness;

in fact, absolute idealism is commonly called objective idealism. We shall have more to say of subjective idealism and absolute idealism when we consider them historically and critically from the standpoint of their ontological conceptions. The importance of the egocentric predicament as a ground for idealistic philosophy will be discussed in our treatment of the idealist's ontology.

Before leaving this section on pan-subjectivism, two theories should be mentioned; namely, *phenomenalism* and *solipsism.* Both, when taken as final and complete epistemologies, leave the whole problem of the relevancy of knowledge unsolved. Phenomenalism, when advocated as the most adequate epistemology, betrays its exponent as an adherent to the theory of skepticism. Solipsism, when considered as the ultimate epistemological theory, becomes an instance of the doctrine defined above as dogmatism. Phenomenalism has already been discussed in the preceding chapter. It is sometimes called *sensationalism.* The best early expression of phenomenalism is found in the writings of David Hume (1711–1776), a philosopher who quite readily called himself a skeptic. Hume denied both the outside bodily substance of Locke and the internal spiritual substance of Berkeley. All that we can know, according to Hume, are the expressions of sense and memory images of the sense impressions. The connection between impressions is not a necessary consequence of uniform procedures in an ultimate physical or spiritual reality; what we call causal relationship is merely the state of affairs which results because we habitually perceive in a routine way. The uniformity of nature is the result of psychological and not ontological regularities.

When the phenomenalistic or sensationalistic point of view becomes a working policy for our intellectual activity, it is often given the name *positivism.* August Comte (1789–1857), the founder of positivism, urged thinkers to give up theological and metaphysical explanations of natural events and to use the ''positivistic'' method of investigation, a method already presented in our treatment of fact, hypothesis, and law as scientific concepts.

Comte's three stages through which man's intellectual processes have passed in the development of science are now classic. The first period, according to Comte, is the theological stage, in which imagination is preëminent and events are explained by spirits and gods. In the second stage, the metaphysical level, speculation is most important, and abstract conceptions of substances and causes replace supernatural agencies. The third stage is that of scientific description, or positivism; observation and induction are emphasized, and laws are regarded as the outcome and not as the presupposition of knowledge. Comte is also noted for his classification of the sciences into six main groups: mathematics, astronomy, physics, chemistry, biology, and sociology. He arranged the sciences in order of their complexity from mathematics to sociology, the science of which he is often called the founder. Other names important among positivists are: John Stuart Mill, Ernst Mach, Henri Poincaré, and Karl Pearson.

Solipsism is the doctrine that a knower cannot transcend his own conscious experience. The term comes from two Latin words, *solus* and *ipse,* meaning "self alone." For the solipsist, who believes that everything is an idea of his own, there is no logical ground for believing in the external reality of physical things or other selves. Berkeley, the subjective idealist, avoided solipsism by assuming the existence of other centers of knowing beside himself. A person who would seek to maintain the position of solipsism would be the worst kind of a dogmatist and would profit by a strong injection of skepticism in his intellectual outlook. There is only one being who may be a solipsist and who may legitimately be dogmatic about his solipsism, and he is the universal Absolute of the objective idealists. Solipsism is possible as a purely logical theory. As a statement of actual affairs, however, it is disproved by the deliverances of ordinary common sense.

C. NEUTRAL MONISM

Before concluding our discussion of epistemological monism, we must recognize a theory in which the present-day new realists seek to combine pan-objectivism and pan-subjectivism, namely, the doctrine of *neutral monism.* Inasmuch as epistemological neutral monism, like the other two monistic theories, just defined, is corollary to an ontological theory to be discussed later, we shall merely indicate the epistemological phase here. We shall also have occasion later to refer to neutral monism in discussing the nature of human selfhood. To the neutral monist, experience is a single unit, which may be interpreted either as matter or as mind. The material and mental aspects are regarded as equally fundamental and prior. The content of experience is matter or mind, depending upon its context. If it is considered as independent of a knowing activity, experience has a materialistic cast. If it is related to a knowing agent, which, for the recent realist, is the nervous system, experience assumes the status of mind. Experience is neutral, therefore, in that it may be interpreted either from the standpoint of physics or from the standpoint of psychology.

The theory of neutral monism is sometimes called the *identity* theory, because it treats mind and matter as identical in nature, even though the identical substance may be viewed from two perspectives. R. B. Perry, an outstanding neutral monist in epistemology,[7] uses the word *mind* to indicate this twofold substance, but he points out that introspection and observation disclose respectively two different phases of being. The two methods of investigation are supplementary one to the other and deal, as it were, with two aspects of one shield. The unification of mind and matter into one reality with a double aspect is a development of an epistemological doctrine found in

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[7] See "Present Philosophical Tendencies," Chs. XII and XIII. (Longmans, Green and Co.)

Ernst Mach's theory of elements;[8] in Richard Avenarius' attack on introjection;[9] and in William James's conception of pure experience.[10]

This epistemological theory of neutrality should not be confused with another notion of neutral monism in contemporary realistic ontology. The term *neutral* is used also to refer to the character of subsistents, or entities which have no properties but those of pure being and time status. These entities, which we shall later find to be the ultimates of scientific analysis, when we consider new realism as a pluralistic ontology, are neutral, not in the sense that they may be considered as either mind or matter, but are neutral in the sense that they must be considered as neither mind nor matter. They have only the attributes possessed by logical characters. The laws of mathematics are subsistents, manifesting this neutrality of purely logical being.

III. Epistemological Criticism

The point of view of criticism in epistemology arises out of a dissatisfaction with dualistic and monistic theories. It is discontented with the traditional dualisms, not because they divide experience into separate realms, but because they do no more than make this bifurcation. To the critical epistemologist, dualism has been the statement of a problem, not its solution. Critical epistemology assumes the main thesis of dualism, but goes beyond dualism in attempting to demonstrate how the mental and the physical come together in experience. Criticism conceives of monistic epistemologies as unwarranted simplifications. To make mental elements physical or to reduce the physical to the mental is to execute an arbitrary procedure which contradicts the certainties recognized by the most feeble common sense.

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[8] "Analysis of Sensations," translated by C. M. Williams. (Open Court Publishing Co., 1914.)

[9] "Kritik der reinen Erfahrung."

[10] "Essays in Radical Empiricism." (Longmans, Green and Co., 1912.)

We shall discuss two critical epistemologies, the twofold division being based, as in the case of the other epistemologies, upon a consideration of the realistic and idealistic phases in the critical theory of knowledge. The realistic type of the standpoint is a recent doctrine, namely, *critical realism.* The idealistic form is the older notion of criticism proper, the theory of Immanuel Kant (1724–1804), the doctrine commonly known as *transcendentalism.* Both of these critical epistemologies are triadistic. Both believe that in the knowledge situation there are these three elements: an *external entity,* the objective real; the *datum,* the sphere of immediate knowledge where the objective and subjective realities are brought together; the *ego,* the subjective, or internal reality. The difference between the newer and the older points of view lies in the fact that the newer, or realistic theory, is more concerned to elaborate the nature of the objective real, whereas the older, or idealistic conception is more interested in the characteristics of the subjective real. A third epistemology, closely related to critical realism, will also be considered. Let us examine each doctrine in more detail.

A. Critical Realism

Seven philosophers are the original supporters of this doctrine. They are joint authors of a coöperative volume on the standpoint, called "Essays in Critical Realism." Their names are Durant Drake, A. O. Lovejoy, J. B. Pratt, A. K. Rogers, George Santayana, R. W. Sellars, and C. A. Strong. These men object both to the contention of the idealist that we only know psychical content and to the position of the new realist that we are aware only of objects interpretable in terms of physical science. They deny the thesis held both by idealists and new realists that when knowledge occurs the object known is in the field of consciousness. The critical realist objects to subjective idealism because the subjective idealist cannot account for the "out-thereness" of our experiences. To believe in subjective idealism necessitates belief in a power in the knower to project experiences into the external world, which the knowing individual does not possess. The critical realist criticizes the naïve and new realists for giving sense qualities too much "out-thereness." To the critical realist, the other types of realism falsely reduce mind to a mere selecting mechanism. The exponents of critical realism, furthermore, believe that they have a more valid account of error than other contemporary thinkers. The objective idealists minimize error by making it partial truth; the new realists, on the other hand, magnify the legitimacy of error by giving it an existential status equivalent to that enjoyed by truth. The pragmatists, say the critical realists, avoid the problem of the nature of error in order to examine the conditions and consequences of error.

For the critical realist three factors are present in the knowledge situation. They are: the *physical object,* the *mental event,* and the *datum,* or *essence.* For the critical realists, Durant Drake, A. K. Rogers, George Santayana, and C. A. Strong, the datum is neither mental nor physical. It is not, in other words, an existent. Data are logical entities, similar to the subsistents of new realism, and have no laws in the world of existence. The data, however, refer to existents. By means of the data we can know in consciousness objects which, in their real existence, are outside of consciousness. That data are recognized as referring to external entities and are not the final objectives of knowledge themselves is due to the instinctive feelings and practical beliefs of man to endow data with this power of reference. A. O. Lovejoy, J. B. Pratt, and R. W. Sellars believe that the datum is an existent; it is the character of the mental state at a moment of perception or thought. According to Sellars, to know is to think an object in terms of contents or characters which may be called logical ideas, and which reveal the characteristics and relations of the object.[11]

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[11] See "Principles and Problems of Philosophy," pp. 131–132.

Whether the datum, or essence, is regarded as existent or subsistent, for all critical realists it is the middle term in the knowledge complex. The knowing agent, or self, intuits the datum, and the datum, in turn, represents, in the consciousness of the knower, the objective, external, known thing. Knowledge is consequently, as Santayana has described it, *transitive* and *relevant.*

It is transitive in that the knowing mind, by means of the essence, can pass over from the psychological to the physical world. Knowledge is relevant in that the physical reality may have the qualities assigned to it by the essence. The critical realist's essence is the *what* in knowledge detached from the *that.* It may attend either sense or thought, and may be indefinitely complex. It is the "given" meaning or intent of the real object which is postulated as existing. When the nature of the existent corresponds to the meaning of the essence, knowledge is true; when there is inadequate correspondence between existent and essence, knowledge is faulty.

Critical realism is an ingenious theory. It represents, however, more the desire to present an epistemology which will give a logical explanation of error than a concern to interpret knowledge as it appears to us in observation or introspection. If the datum is purely a logical subsistent, then it is really a fiction of the imagination, interesting but not verifiably true. If the essence is a storehouse of concrete experience, then it is the datum, mind, presented in personal idealism. One wonders how we may be sure that the essence truly represents the objective reality, or even how we can be certain that the external object is actually there. If the assurance is to come by arbitrary postulation, why not be a new realist and let the datum be the objective real, or an idealist and call it mental content? The notion of essence seems to raise more problems than it solves. It must be recognized, however, that the problems which it does not solve are also baffling to other epistemologies.

B. PHENOMENOLOGY

In connection with critical realism another epistemological doctrine is worthy of mention, namely, *phenomenology.* If you substitute the term *pure consciousness* for the word *essence* in critical realism, the critical realist's theory would appear very similar to the doctrine of the phenomenologist. Edmund Husserl, the founder of phenomenology, believes that philosophy should have its own subject matter and its own principles. He does not regard philosophy as an explainer of knowledge, arrived at by science, or as a justifier of knowledge, reached by intuition, tradition, and prejudice. He is more radical than the new realist, who would detach experience from psychological conditions; he would consider experience as separated from its physical and temporal connections as well. Husserl would study "pure consciousness." Philosophy's preëminent concern should be with the vital experience, *Erlebnisse,* and with the interrelations between them.[12] The fundamental kind of knowledge is the contemplation, or intuitive inspection, of essential experiences, *Wesenerschauung.* Phenomenology stands for the elimination, *Ausschaltung,* from consciousness, of all existents. Existents have existence, but, in philosophy, their existential status is not studied. For phenomenology, existents are studied as features of pure consciousness. This selective study of vital experience, or essential experience, occurs by means of a bracketing, *Einklammerung,* which makes possible the examination of experiential objects as separated from their relations with the spatio-temporal world, God, or the principles of mathematical or logical science. Nature, in phenomenology as in critical realism, is postulated, not immediately experienced. We receive in experience only the outlines or adumbrations, *Abschattungen,* of the outside, existent reality. Objects and qualities of objects are transcendent to the nuances in the realm of pure consciousness. This is true whether the objects are perceptual or imaginational. The objects beyond the intuited vital experiences are phenomenal and uncertain; the factors of immediate experience are absolute and certain. Knowledge of features of pure consciousness is apodictic and not based upon faulty inductions. The principles of immediate experience are not subject to the skepticism and relativism applicable to laws resulting from inference; they are universal and *a priori,* the unconditioned presuppositions of all the sciences.[13]

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[12] See "Ideen zu einer reinen Phänomenologie und phänomenologische Philosophie" in *Jahrbuch für Philosophie und phänomenologische Forschung,* Vol. I, Part I. (Niemeyer, Halle, Bd. I.)

The phenomenologist treats the mechanism of knowing similarly to the critical realist, but the latter endows the objective entity with much more certainty and actuality than does the former. The phenomenologist, in spite of his separation of his realm of essence from the spatial and psychological spheres, does give to his vital experiences forms usually associated with mind. In fact, phenomenology has also much in common with the idealistic type of epistemological criticism propounded by Kant. To this third critical theory we now turn our attention.

C. Transcendentalism

What the datum is to the critical realist the realm of phenomena is to Kant. To the critical realist, however, the organization of the data is significant of the pattern in the physical object, whereas for Kant the ordering of the phenomena is a function of the psychological subject. The critical realist avoids error if he intuits an essence which truly conforms to the laws of external reality; the transcendentalist escapes error if his middle phase in knowledge truly conforms to the laws of internal reality. For both the objective and subjective realities are known by inference rather than by immediate insight or observation. In other words, both become critical in order to escape from the skeptical point of view of phenomenalism.

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[13] See "Logische Untersuchungen," Sections 21–25, second edition. (Niemeyer, Halle, 1921.)

The problem of the transcendentalist, as it was dealt with by Kant, is that of showing how science is possible. How can law and order be ascribed to the chaotic mass of sense impressions? Kant defined the task as that of demonstrating how synthetic judgments *a priori* are possible. That is, how can we show that it is possible to make necessary and universal judgments with respect to properties and relations which are not inherent in things? For Kant scientific knowledge does not occur until we learn something new about a fact and are able to be certain that the learned idea is not intrinsically connected with the fact and are also able to be sure that the learned idea represents a circumstance of the fact which is uniformly present. True knowledge is possible because the organizing ego, or mind, orders, through the instrumentality of native, non-empirical forms of perception and thought, the sense materials or *phenomena* produced by the thing-in-itself, the *Ding an Sich,* the unknowable objective real.

The three faculties of knowledge, according to Kant's treatise, "The Critique of Pure Reason," are *sensibility,* treated in the Transcendental Aesthetic; *understanding,* propounded in the division of Transcendental Logic, called Transcendental Analytic; and *reason* proper, explained in the part of the Transcendental Logic described as the Transcendental Dialectic. The organizing principles according to the Aesthetic are intuitions of space and time. Space and time are unlearned, inborn faculties, which make it possible for sense impressions, as they are being received, to be known as definite facts having recognizable relationships to other facts in point of space and time. Through the instrumentality of the intuitions the sciences of mathematics and physics are possible. The organizing principles presented in the Analytic are the categories. Their names have already been stated in the preceding chapter. Through these agencies the mind arranges the facts, localized and bounded by the intuitions, into uniformities explainable by the laws of nature. The chief category is that which orders facts according to their causal connections. The organizing principles which are the problem of the Dialectic are the ideas. These determiners of experience represent the mind's attempt to reach ultimate conceptions. The ideas are the highest of man's synthetic faculties; they seek to define such entities as the thing-in-itself, the universe as a whole, God, and the soul. They fail in their attempt, however, because pure reason, in trying to show that these entities have the validity of scientific objects, gets into contradictions, or *antinomies.* Kant does have a device by which we may believe in these ideas; the device is practical reason, or faith.

The transcendental method, or criticism, portrays the limits as well as the possibilities of finite knowledge. It gives us a way out of skepticism by organizing the confusions of sense into laws, but just as surely does it keep us from dogmatism by showing us that such ''transcendent'' fields as God, the universe, and the soul are not legitimate objects of ''transcendental'' scientific knowledge. The method of Kant extols the activity of mind; it avoids subjectivism only by the postulation of an outside thing-in-itself. The activity of mind, however, cannot be capricious; it must conform to the *a priori* principles; thus, the world of phenomena is the same for all, allowing for certain individual differences, and science, as universal and communicable knowledge, is possible. When one holds that the principles of perception and thought are the same in all individuals, it is an easy step to go further and believe that this universality is possible because each individual expresses in his intellectual life principles that are not his private endowment but objective features of the cosmos itself. When this step is taken, transcendentalism, in the sense in which Kant discussed it, becomes transcendentalism as Ralph Waldo Emerson espoused it. Criticism is changed into objective idealism. We may criticize Kant as we will; we may say that the notion of the thing-in-itself is unnecessary, even foolish; we may call his classification of the categories artificial and architectonic; we may decry the subjectivity of space and time; but one principle enunciated by Kant we can not disdain. Knowledge can only be true and useful when we recognize, with Kant, that conceptual thought without perceptual content is empty and that perceptual content without conceptual thought is blind. We shall meet Kant again when we arrive at the discussions of freedom and morality.

IV. Epistemological Evolutionism

This theory discusses the relation of knowledge to reality by showing how doctrines of evolution have affected the problem. There are realistic and idealistic phases to this doctrine, as with the other epistemologies. The realistic point of view is presented in the *theory of emergence;* the idealistic perspective is noticeable in the standpoint of *pragmatism.* The former is significant of the influence of creative and vitalistic evolutionary theories; the latter represents the sway of Darwinian or mechanical notions of evolution. To the believer in mind as an emergent, knowledge appears because nature is successful; to the pragmatist the presence of thought is always significant of a thwarted natural process.

The theory of emergence regards mind more as conditioned by nature; pragmatism considers mind more as a conditioner of nature. Both theories agree that mind, whether the consequent or the controller of nature, is superior to nature in meaning and value.

A. The Theory of Emergence

Inasmuch as this doctrine, celebrated in the writings of C. Lloyd Morgan, receives elaborate interpretation in our discussions of cosmology, ontology, and psychology, we shall just indicate its nature at this point.

According to the emergence notion, mind is the next-to-highest level in a theory of evolution which conceives of reality as a system of ascending levels. Each stage is not only more complex, but also more significant than the level before it. The hierarchy extends from the simplest type of being, the realm of subsistence, to the most complex reality, spirit. The common names for the stages are matter, life, mind, and deity. Each level incorporates in its being the characteristics of the lower levels, but it also possesses a novel character, which cannot be reduced to the categories of a lower system. Thus the realm of psychology implies in its scope the principles of physics, chemistry, and biology, but it also involves a purely psychological feature, not interpretable in terms of these other sciences, namely, mind or consciousness. According to this theory, mind, of course, cannot produce the realm of material things, nor can it be completely identified with the material elements of reality. The relation of the mental and the material is that of compresence. In the situation of togetherness experience occurs because the mind selects certain non-mental entities as the objects of its awareness. Awareness of the outside stimuli, or contemplation of them, to use the terminology of S. Alexander, an exponent of the theory, is the only relationship between mind and that which is other than mind. It is no wonder that consciousness, according to this point of view, is sometimes treated as nothing more than a relation, when the content of awareness, or better, the objective of awareness, is not in consciousness at all. Mind, however, is possessed of some content in that it may introspectively know its own processes, or to use a happy assertion of Alexander, mind may enjoy itself. As is pointed out elsewhere, the idea that mind is a novelty, transcending matter and life, may be used as an argument in favor of the uniqueness and freedom of selfhood.

B. The Theory of Pragmatism

Transcendentalism errs in depriving matter of any meaning apart from mind; the emergence theory errs in depriving mind of any existence apart from matter. Pragmatism seeks to show that the material world has meaning and the mental sphere has existence. The material world is given meaning by mind; mind actually changes nature to make it conform to the standards of intelligence. The mental world is given existence, because, to the pragmatist, intelligence is just as real a variation, just as significant an adaptation, in the evolutional processes as any of the adjustments observed in geology, chemistry, or biology. The living reality, in order to continue, effects consciousness as an instrument of survival. Mind is no useless by-product, to the pragmatist, but an efficient and necessary tool for the perpetuation of the great life force. Man is a product of nature that is past; he is a producer of nature ahead. His opportunity and obligation is to use, in the present, his experiences of the past so that his experiences in the future may be as sufficient and as satisfying as possible. Truth, for the pragmatist, is not to be judged by its reference to something that is ultimate and eternal. The pragmatist may believe in certain metaphysical conceptions, but their truth, like the truth of all ideas, is to be found in their relevancy to actually perceived facts. We shall postpone elaboration of this position and also reference to its chief exponents until the next chapter, where we discuss the various criteria of truth.

C. The Theory of Immediateism

A theory of knowledge, peculiarly related to pragmatism, both by similarity and contrast, is that of Henri Bergson (see his "Introduction to Metaphysics," translated by T. E.

Hulme). The theory has been called *intuitionism,* but we shall give it the more inclusive name of *immediateism* inasmuch as intuitionism has such definite implications in ethical science. For Bergson, as for the pragmatists, reality is life, motion, change. Pragmatism and the theory of Bergson both treat intellect as a device for dealing with ongoing, dynamic reality. For Bergson, however, intellect is only a makeshift; whereas, for the pragmatist, intellect is a true revealer of nature's movements. Bergson and the pragmatists both believe that intelligence enables us to control material existence, but, whereas, for the pragmatist, matter is significant of nature at its highest stages, as well as at its lowest, matter, for Bergson, definitely represents a downward movement in reality, a force in opposition to life, the maker of reality. Consequently, for Bergson, although intelligence is valuable as a method of control and for purposes of communication, it actually presents a false view of the world, dealing, as it must, only with concepts that betoken static, spatialized, mechanical forms. For Bergson, intuition is the discloser of the truly real. Through intuition we enter into an intellectual sympathy with creative, onrushing processes of nature and life. Conceptual thought must deal with symbols, and symbols are wooden and lifeless; by intuition we have direct insight into the free, creative, and ineffable psychical flux which is the key to reality itself. We welcome the warning of Bergson that purely intellectualistic interpretations of nature, life, and mind falsely reduce these entities to mechanical, abstract, and static categories and rob them of their concrete and teleological significances, but we feel that a persistent practice of the intuitionism he endorses would fetter, rather than free, the human soul. We gain our enduring freedom, not by irrational mystical excursions into the heart of things, but by intellectual understanding of the laws of animate and inanimate nature and by willing devotion to them. Reason does work by symbols, and symbols do refer to unchanging forms, but we may constantly attain new symbols to represent the ever-appearing novelties of the world.

V. Objective Experientialism

The reader is perhaps wondering, after this survey of different conceptions concerning the relevancy of knowledge, which point of view is the one to accept. We are of the opinion that the most satisfactory theory would be one which draws upon the conclusions of several doctrines for its tenets. The reader may select any combination of standpoints which he chooses. We submit *objective experientialism* as one possible synoptic theory.

1. **Knowledge involves experience of reality.**—Our point of view is experiential in the sense that we start from experience. We hold that the real must be experienced. Any theory which treats the real as more abstract and less qualified than the facts presented to common sense seems to be a sophisticated alteration of things as they really are. In other words, we believe that subjectivism, personalism, and phenomenalism depict experience and nature correctly when they hold that all philosophy must take for granted the fundamental character of sense perception. Our point of view is objective in that we hold that particular, isolated facts are an abstraction. The subjectivist, personalist, and phenomenalist treat perceptions too atomistically; they think of them as appearing in experience in discrete forms. The knowledge of details we get in perception is partial knowledge, because it fails to interpret these details as aspects of a system of an infinite number of details. The higher mental processes in blending into a unity with perception are significant, not only of a unity in consciousness, but also of objective reality as an organized totality. We agree with the new realist that in the moment of sense perception there is an identity of subject and object, but we would go further with the pan-objectivism of realism and affirm the immanence of idea and object in affairs of

laws and principles as well as in situations of fact. Of course, some realists do hold that consciousness is one with known logical entities, as laws, principles, postulates, and so on, but realists generally err in defining these logical entities as externally related to facts and even as externally related to each other.

2. **Knowledge is objective.**—We would maintain that meanings are objective, but we would locate them in the same sphere as the independent factual existents. As percepts and concepts cannot be separated in the subjective side of experience, similarly they form one unified system in the objective aspect of experience. Entities known are, therefore, objective in two senses: they are *objective as independent, for their being, upon being known,*—they can exist outside of the conscious states of a knower; they are also *objective in that they always refer to other entities to which they are related.* In any moment of effective perception we are not only made aware of one external object, we are also made aware of the situation that this one object is linked up with an indefinite number of objects, and that knowledge is a widening process which only ends in an experience universal in scope. That is, our idea of objectivity embraces both the realistic and absolutistic conceptions. Our point of view is that of Professor Leighton, who, calling his theory a *social realism,* asserts that "knowledge is that function of the real world operating in thinking organisms by which the organism becomes aware, in increasing detail and extent, of its own qualities and the qualities of its environment in their mutual relations—to the end that there may be 'more life and fuller.' "[14]

3. **Knowledge implies the participation of personal mind.** We agree, as we have said, with the epistemologies which treat the experienced as the real, but our definition of "real" is different from theirs. To us perceptions and thought are real, not because they are self-evident, intense, seemingly self-existent, but because they are real for a

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[14] "Man and the Cosmos," p. 82. (D. Appleton and Co., 1922.)

personal mind. We believe that it is no more possible to say that a thing is real unless we say that it is real for someone than it is possible to say that a thing is good or useful unless it is good or useful for someone. Most of the epistemologies start with the data of experience as the realities and then, to account for the existence or the organization of these realities, infer the presence in the knowledge situation of some transcendent external object or some transcendent internal subject. From our standpoint, the datum of experience is the whole situation of a *knowing subject knowing a known object.* Whenever we attend to the knowing subject alone, or the knowing alone, or the known alone, we break up the real situation into abstract, unreal elements. We hold, with Professor J. A. Leighton, that "no meaning can be attached to the idea of an object existing independently of anybody's perceiving it. The independent reality of an object is the reality of something that can be perceived under definite assignable conditions by some sort of percipient organism. Who cares about a real object which is apart from and indifferent to any percipient organism? *The real world is the world of social perceivables.*"[15] Professor Bosanquet speaks of the finite mind as a *living focus* of the world,—that in which (one might say that part of nature in which) the whole realm of reality, in all its diversity and richness, comes to self-disclosure. Of course, only to the Supreme Mind is this disclosure full or complete. Thus, in the idea of Leibnitz, the finite mind mirrors the universe.[16]

The relation between subject and object in the knowledge situation is, so far as the relationship itself is concerned, just like the relations which unite all features of the universe into one great absolute system. The only difference, but it is a very significant difference, is that the subject in the knowledge situation is possessed of a capacity to know that it is related to the object. Experience, in other words, is a relationship between two items of reality in which one of the items is aware of the relational situation. To use the words of Professor Leighton, "minds are centers in which the nature of reality becomes conscious of itself."[17] Finite selfhood is a part of reality enjoying self-consciousness; absolute selfhood or God would be the entire universe as appreciative of its system of interrelated constituents.

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[15] "The Field of Philosophy," p. 528. (D. Appleton and Co., 1923.)

[16] *Cf.* B. Bosanquet, "Principle of Individuality and Value," p. 355; also Ch. X. (The Macmillan Co., Ltd., 1912.)

The range and value of human personality, according to this doctrine, is proportionate to the capacity of an individual to bring to self-consciousness the interrelationships of nature. In this process of registering the world's behavior the mind is not a passive factor. The mind, through its active capacities, can increase its power as a revealer of objective nature. The most proficient method of enhancing its breadth of experience is that of intercommunication with other minds. As Professor Leighton so completely and clearly puts it, "knowledge of myself, of other selves and of a common physical world in which we meet, fight, coöperate, ignore, or love one another, and with which we strive or drift, are differentiations in the continuum of primitive experience, which develop together and interdependently. The common or physical aspects of experience are socially accessible objects, but society is equally a property of the physical world. The self and the other self have each his own experience; but each knows himself in relation to the other; and the physical world is primarily the enduring though changing ground of the community of intercourse and experience between selves; the other ground is the community of nature in the different selves. Every self is a unique or private center of feeling; but a common world is recognized because selves recognize that they not only perceive but feel and act similarly."[18] The doctrine which Professor Leighton is interpreting is essentially the same in principle as Professor Royce's conception of interpretation. Professor Leighton's objective continuum of experience has the same import as Professor Royce's community of interpretation.

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[17] "The Field of Philosophy," p. 526. (D. Appleton & Co.)

[18] "Man and the Cosmos," pp. 87, 88. (D. Appleton & Co.)

4. Implications of objective experientialism.—It must be recognized here that the position we are upholding does not mean that reality is the community of experiencing minds; such a point of view would be subjective idealism and would negate the independence of physical entities. Nor must the real be regarded as the experience of an individual who has built up his psychical life by intellectual or perceptual intercourse with physical objects and other selves; to identify the real with experience is to follow the pragmatist's procedure; it is to accept the *radical empiricism* of William James or the *immediate empiricism* of John Dewey. James and Dewey do not deny an existential status to objects independent of experience, but they regard the meanings of these objects as ideas in the human mind and not as inherent characteristics of the objects themselves. We have said that the real must be real for a mind or self, but the pragmatists carry this requirement too far and forget that an object's being real implies also an object's being. To affirm an object real, to which at the same time the status of independent existence is denied, is to manifest extreme egoistic humanism. Another objection to pragmatism—and the same criticism applies to subjectivism and personalism—is that the point of view is pluralistic. We deal with the problem of singularism and pluralism later, but we can state our opinion here that any doctrine of epistemology which regards real entities, whether they be considered as experienced contents or experiencing activities, as externally related, separate elements is not ultimately tenable.

A thing is any portion of the organic whole which in the knowledge situation is discriminated by perception as being a particular, independent, external, moving (or resting) object, possessing, in addition, secondary qualities. This definition allows to perception a large degree of synthesizing power. The various qualities of a thing, the sense data, would be disunited elements if perception were not an organizing principle. The synthetic process in perception is, however, revelatory of an actual unity of aspects in the thing itself. Meanings are the relations which things have with and for each other, the ways they affect each other. The meanings are there whether recognized or not, unconscious meanings, we might say. To become aware of meanings, mind must pass beyond the stage of perception to the level of conception. Conception is an active process of mind; the self cannot be passive and conceive of the interrelationships between things. The relations between things are effected only because there is in things themselves a teleological and dynamic propensity making for relatedness. The creativity of mind in producing concepts and ideas is significant of the productive character of things to assume the orders, connections, and uniformities which the concepts and ideas represent. We would be realistic enough to hold that the meanings apprehended in conception are as intrinsic to systems of objects as massiveness or redness is intrinic to a thing in the perceptual situation. A mind or self is a thing which is capable of bringing to self-consciousness its relations to other things or other minds. A physical thing has meanings, but it does not know that it has them; a psychological thing has meanings and knows that it has them. A mind, so far as it is a thing, that is, so far as it may be perceived by other selves, is related to the other entities of its environment just as things which are not minds are related to the other entities of their environments. But, in so far as a mind is a conscious being, it represents a higher order than physical objects. It is a knower, and not merely a known.

But there is a higher level of selfhood than that of being a knower. A knower is one who gets no further in knowledge than description and explanation. The highest level is that of interpreter. The knower knows things;

the interpreter knows "the knower's knowing of things." The interpreter knows how things affect mind, or, to relate our point to the thesis above, the interpreter knows what reality is. He knows the nature of the relationship which exists between the physical and the psychological realms. He realizes all this because through introspection he can know how the objective and subjective are blended. The result of this insight is the invention and employment of symbols and signs of his inner experience. He appreciates the truth of the famous dictum, "Know thyself." With Socrates, Leibnitz, and Emerson, he holds that self-knowledge, when completely, correctly, and coherently attained, is knowledge of the universal real. He moves on to the attainment of this ideal goal by constantly incorporating into his experience the experience of others as their inner life is opened up to him through an understanding of the signs and symbols which, in a common language, are accessible to all.

5. **The nature of reflection.**—Reflection on the part of a self is literally reflection. In description consciousness reflects the unification of sense data in the formation of things—the level of common sense and facts. In explanation consciousness reflects the unification of things in the formation of classes—the level of science and laws. In interpretation consciousness reflects its own reflections—the level of philosophy and principles. Does not such a view of mind make it merely a passive reproduction of events? Does not such a theory of thought deprive the psychical of all content and richness? We answer with a decided *No,* and for three reasons: In the first place, the notion of consciousness as a reflector makes consciousness an empty mirror only if a dualistic conception of knowledge is accepted. But mind is not a blank tablet upon which impressions from without are imprinted. Mind is a participant in the situation whose activity it represents. It is reflection which is at the same time self-expression. In the second place, the mind, in order to truly reflect or rep-

resent the objective aspect of experience, cannot be passive and inert. The existential realm it betokens is an active, creative process. *If consciousness is to be a manifestation of that which goes on in nature, it too must be a vital, organizing, productive force.* Our trouble is that we think only of the things in our environment; we live in the world of perception and common sense. We should rise into the sphere of conception, where we would be concerned with the relations of things to things. We would then appreciate the fact that relations *relate,* and in relating are dynamic, working agencies. We would then be sure that no conceiving process, on the part of mind, which was not itself an energetic activity, could truly represent the outside relational system. In the third place, our whole discussion of the knowing process has paid attention only to the cognitive side of the self's experience. But *the self is not only a knower; it is a doer, a sufferer, an enjoyer, a lover, a creator.* Personality has axiological as well as epistemological aspects. Our treatment of knowledge has, therefore, been an abstraction; it has portrayed but one side of human nature. The defect, however, has been one of partiality, rather than one of falsity, and one imperative in an analytical and selective approach to any subject matter.

Our supplementation of cognitive consciousness with affective and volitional features must not give the idea, however, that human experience has characteristics not enjoyed by reality at large. We would hold that, like perception, conception and interpretation, emotion and conation, in consciousness, are definitive of states of affairs in the objective world. Of course, there are errors in emotional and volitional experience. Otherwise the universe would be interpreted as a hodge-podge of conflicting purposes and affections. But we correct and make allowances for false perceptions and conceptions. We have arrived at logical criteria of truth in the realm of cognitional experience. It is not inconceivable that in the future there will be standards for estimating the objectivity and validity of esthetic and moral judgments also. When that time arrives, more thinkers may be willing to accept the theory, long since established in the field of religious faith, that the world is a universe of truth, goodness, and beauty as well as a cosmos of space and time.

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CHAPTER VIII

THE CRITERIA OF KNOWLEDGE

WE HAVE described experience as the situation in which the character of a system of interrelated elements is reflected in one member of the system, which possesses the unique power of "reflection" called consciousness. Reality, we have suggested, is the continuum in which three elements are unified: the *knower,* the *knowing,* and the *known.* Judgment, therefore, is the process by which, in knowing, the known is revealed to the consciousness of the knower. *The problem of truth and error arises from the knowledge circumstance, because we wish to know whether or not in a particular instance the judgment made by a knower actually depicts the object known.* It must be understood that, since knowing may be by introspection as well as by observation, judgment may refer to mental as well as to material objects. We may make judgments regarding our feelings, hopes, and pains just as legitimately as concerning our houses, books, and friends.

I. Obstacles to True Knowledge

Two sorts of difficulty present themselves to an individual who would know the truth. The first type of handicap is intellectual; the second, moral.

A. INTELLECTUAL DIFFICULTIES IN JUDGMENTS OF TRUTH

The problem of truth is but partially dealt with when we concern ourselves only with judgment which may be expressed in propositional form. Judgment, however, is sometimes of a sort which precludes its expression in terms of definite, meaningful sentences. Two types of knowledge involve this difficulty: (1) cases where the judgment deals with extremely *simple states of consciousness;* (2) cases in which judgment refers to very *complex objects of our interest.*

Some judgments reflect such simple qualities of experience that we affirm their truth without attempting to arrive at a standard of their truth. Is the instinct of hunger true or false? Is the sensation of yellow true or false? Is an earache true or false? These questions represent experiences with such obviousness that we never raise the question that they might be false. When we are in pain, we do not bother ourselves with the problem of the relation of our subjective experience to an objective existent. Ideas may be true or false, but to call pain true or false, that would be nonsense, most of us would say. Of course, the proposition *I have an earache* may be true or false, or that the earache which I have is severe may be true or false; but earache as an undescribed simple experience of pain seems to be too immediate to be other than true. So, too, with experiences of just the opposite sort, which are unique because of their complexity. Is our appreciation of a beautiful sunset true or false? Is mystical ecstasy true or false? Most of us think of these experiences as of great value and import, but seldom does anyone think of esthetic contemplation as true or false. Sense qualities, like pain, red, heavy, and so on, seem to be so objective, so ''out there'' that doubt of their truth seems presumptuous. Esthetic and religious matters, on the other hand, seem to be so subjective that to assume their objective validity seems highly arrogant. Both of these opinions are wrong, however, because all judgments, whether of the most simple or the most complex experiences have both subjective and objective aspects. In all judgments there is the possibility of an incongruity between the two aspects. The knower may not truly express in consciousness, or in statements to others about the data in his consciousness, what actually is in the external order. The reason for the incapacity of knowledge to portray existence is, however, more often than we realize, not an intellectual difficulty, but a moral inability.

B. Ethical Impediments to Truth

The self often does not express in judgment the true state of affairs in nature because it does not will or intend to do so. Truth is not attained by simply letting nature speak to our minds. We have to coöperate with nature in the knowledge process. In discussing the nature of knowledge in a previous chapter, we indicated how the individual can, by complying with certain physical, physiological, and psychological conditions of knowing, more adequately express what is true. When we say that the failure to know correctly is frequently moral, we do not mean to say that the individual is always responsible for his inability to will to perceive the truth. His inability may be due to situations in his environment or conditions in his organism over which he has no control. But, if the individual has handicaps which he by himself cannot remove, moral responsibility rests upon the social order to effect a remedy. The solution of the difficulty may be even that he may have to be ''born again,'' in the sense that a new physiological and psychological background must become his, if he is truly to bespeak in his consciousness and to express in his language the status of objects about him. Religion is implied in this rebirth, because often the enthusiasm for life and truth which comes with vital religious experiences restores man's incapacitated will to strength and vigor.

Another factor of moral implication in attaining an ability to represent the truth is recognition on the part of knowing subjects that knowledge, as we have pointed out, is a community affair. No human being has a monopoly on truth. Persons who trust only their own points of view, who will not confer with others, become either exponents of skepticism or dogmatism. The weaknesses of both of these attitudes have already been discussed. The principle that knowledge has a social character must, however, be exemplified guardedly. To say that we get at the truth through social intercourse does not mean that all types of group stimuli are advantageous in the arriving at truth. The popular mind is notoriously prejudiced and uncritical. There is no such thing as a logically behaving mob. The minds of competent observers and interpreters should be the source of our information and criticism.

Another moral requirement for the attainment of truth is to distinguish closely between judgments of fact and judgments of belief. Here we mean by belief something different from conviction. Belief as a conscious conviction may refer to a judgment that is obviously true. A person may say, "I believe that two plus two is four," but we feel like replying, "A lot of difference it makes whether you believe it or not! Two plus two was four before you were born and will be four after you are dead." Endorsement of perceptions of fact adds nothing to their value. But if a person says, "I believe in liberty," or "I believe in socialism," his assent to the object of his belief may change matters considerably. He may believe in liberty to such an extent that his behavior will manifest the spirit of liberty, and liberty will be increased on the earth. We imply by *belief* the element of uncertainty in an object of intellectual reference. When objects of belief cannot be verified as actually existing or not existing, a sensible man will treat these beliefs with a good deal of caution. He must be sure that he will not bring about the acceptance of his beliefs as statements of fact because of the prestige he has in society. He must be sure that he does not himself accept the beliefs as true because their truth would aid him economically or in some other way. If we try to believe an evident falsity long enough and vigorously enough, we may attain the state of mind wherein we *know* that what we believe is true. William James, in a famous essay, "The

Will to Believe,'' asserted that man may believe in certain propositions whose truth cannot be verified, provided these beliefs do not contradict established facts and provided their acceptance would make for a more abundant life. The danger in such an assertion is that most of us do not go to the trouble to find out whether our beliefs are consistent with known facts; nor are we in any way agreed as to what the good life is. A thief might have the will to believe that theft is a legitimate occupation, and carry out his belief with all the conscientiousness of his moral will. We need to heed the warning of Professor W. K. Wright: ''No one can progress on the path to wisdom who does not look facts squarely in the face and recognize them for what they are, declining to confuse them with his own wishes or ideals. Men should have aspirations and ideals of course; and they should learn how to realize them. But it is sheer intellectual dishonesty to assume that anything is practicable just because its attainment would be a desirable ideal.''[1] As Bertrand Russell asserts, ''To be a good philosopher, a man must have a strong desire to know, combined with great caution in believing that he knows; he must also have logical acumen and the habit of exact thinking.''[2] Thomas Huxley's pronouncement is to the point: ''The assertion that outstrips the evidence is not only a blunder, but a crime.''

To sum up this section on the nature of truth, we restate that true knowledge is that which, in the knowing subject, represents the known object as it really is. Whether you define *psychical* behavioristically or mentalistically, and whether you define *environment* as composed of physical elements or of logical entities, truth occurs when there is agreement between the psychical and the environmental features of experience. Error occurs when the psychical aspect, which is, of course, judgment, fails to agree with the object to which judgment is referring. We need to recognize, however, that judgment has volitional and emotional, as well as intellectual, aspects, and that, therefore, the world of truth may be one that appeals to our sentiment as well as to our reason.

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[1] ''General Introduction to Ethics'' (1929), p. 245. (By permission of The Macmillan Co., publishers.)

[2] ''Philosophy,'' p. 3. (W. W. Norton and Co., Inc., 1927.)

II. Evidence of Truth

When we say that a judgment is true if it represents the objective really as it actually is, we put a great obstacle before the searcher for truth. It is easy to define truth, but to prove that the definition holds for experience is a difficult task. How can we know that our judgments refer to the object? How can we tell whether or not the psychical and physical elements of experience are in agreement?

In the history of thought three great theories regarding the standard of truth have been presented: the *correspondence theory,* the *coherence theory,* and the *utility theory.* The first has been supported largely by realists, the second by idealists, the third by pragmatists. Let us examine each of these doctrines. In closing the chapter, we shall suggest a fourth, the *interpretation theory* of truth.

A. The Correspondence Theory of Truth

Those who hold to the correspondence theory assert that *we have true knowledge when there is a coincidence between the perception as consciousness and the perceived as physical object or when the concept in the mind accurately represents a situation or a principle in objective nature.* This theory does not help us, however, to know when we have the truth. The problem still remains—how to tell when there is a correspondence?

We may say that there is a correspondence between mind and matter, or between the subjective and objective features of experience, when the mental or subjective aspects are *clear, distinct,* and *vivid.* This test, however, is not dependable, because we often have very intense and definite ideas which are quite false. Feeble-minded persons, very young children, and fanatics frequently have ideas which are clear and compelling, but nobody would insist that, therefore, their ideas are correct. In fact, instead of being regarded as true, the ideas of such individuals are regarded as particularly undependable and even dangerous.

Criticism is also levied against the correspondence, or *copy theory,* because ideas and other mental elements do not actually copy physical things. Things are ponderable, spatial; ideas are imponderable, non-spatial. G. T. Patrick[3] meets this difficulty by pointing out that the correspondence theory has really meant the *fidelity* of idea to external object, and not an actual mental reproduction of the objective entity.

One can never be sure, if correspondence is the only standard, whether or not the copy, or image, truly depicts the objective datum. In the last analysis, one has to *make* the postulate that knowledge is relevant to the outside world. The legitimacy of the correspondence theory, when the theory is taken alone, requires an assumption that knowledge somehow or other does portray external existence. The coherence theory and the utility theory come in to supplement the correspondence theory and to show that the intuitive faith which we have, that knowledge does refer to real facts, is a rational process and justified by the complete state of affairs in experience. The coherence theory and the utility theory seek to show that true ideas agree with reality, or else they could not possess the characteristics which they do possess. For the coherence theory, the consistency of ideas with each other is significant of their validity; for the utility theory, the serviceability of ideas in helping the knower to meet the situations of life reveals the actuality of their agreement with the real world.

It will be noticed that we are not discussing *intuitions, mystical revelations,* and *traditional dogmas* as norms for the measurement of truth. These factors seem to us ways of getting truth rather than standards for judging truth. Intuitions, mysticisms, and dogmas have to be tested by the same canons of truth by which we gauge other types of experience: that is, by the norms of coherence and utility. Some truths do seem to be self-evident, it must be admitted, as certain truths of mathematics, geometry, morality, and religion. These conceptions, of the truth of which we are immediately aware, as, for instance, that a straight line is the shortest distance between two points, or that pleasure is to be preferred to pain, never become real to us until we criticize them and subject them to the same tests which we apply to knowledge which we have attained by much struggle and effort. Reflection will not make self-evident truths any truer, but it will make them more vital and will increase our appreciation of them.

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[3] See "Introduction to Philosophy," p. 389. (Houghton Mifflin Co., 1924.)

Let us now pass to a detailed discussion of the two theories which help us to know whether or not our ideas, however they be received—by learning or by immediate insight, agree with the external fact.

B. The Coherence Theory of Truth

The coherence theory of truth is the doctrine generally associated with philosophers who, in their ontology, are absolute idealists. The background for the position is to be found in the philosophy of Georg Wilhelm Friedrich Hegel.

1. **Essential notions of the coherence theory.**—We shall discuss Hegel's philosophy in detail later when we consider the idealistic ontologies. Sufficient it is here to say that, for Hegel, thought and reality are one. The real is the rational, and the rational is the real; and both are the universe as a whole. Nothing less than the all-inclusive absolute is real or true. No finite aspect of the world can be real because it is dependent upon other finite entities. The only truly real entity is the universe itself, because it alone is independent and complete in itself. According to

Hegel, everything in the world is related to everything else. Every particular thing in reality is what it is because everything else is what it is. Reality must be known as one and as a whole to be truly known at all. The world is a systematic unity, in which the finite, the partial, the passing, the imperfect, and the contradictory, are eternally being transmuted into coherent and harmonious constituents of a perfect cosmos.

Later on we shall indicate the cultural dialectic process through which the realization of an ideal universe is consummated. The only point to be noted now is the emphasis upon the comprehensiveness and unity of truth. According to the logic of Hegel, to know the truth about any specific feature of reality is to know all the implications and relationships of this specific feature. Since these implications and relationships extend to and involve all aspects of reality, to know the truth would be to have absolute knowledge; it would be to possess the consciousness of God.

Recent philosophers who have developed a theory of truth upon Hegel's conception of nature are H. H. Joachim, Bernard Bosanquet, F. H. Bradley, and Josiah Royce. All of these philosophers believe that truth is more than merely a copy in mind of a particular objective fact. For all of them, as for Hegel, the physical in reality *complies* with thought, represents the unfolding and solidifying of thought, as it were. There is a correspondence between thought and things, to be sure, but *it is more than a correspondence of similarity; it is the correspondence of identity.* Nature is not other than thought; it is realized or fulfilled thought. Thought is true to the extent that it is inclusive and unified. To use the words of Joachim, "the essential nature of thought is a concrete unity, a living individuality. Truth in its essential nature is that systematic coherence which is the character of a significant whole. A significant whole is an organized individual experience, self-fulfilling and self-filled."[4]

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[4] "The Nature of Truth," pp. 75, 76. (Oxford University Press.)

Josiah Royce's notions that ideas have internal meanings[5] and that reality is the fulfillment of ideas are conceptions also in the interest of the coherence theory of truth. For Royce, "to be" means simply to express, to embody the complete internal meaning of a certain system of ideas—a system, moreover, which is genuinely implied in the true internal meaning of every finite idea, however fragmentary.

Reality is the expression of a single system of thought, the fulfillment of a single conscious purpose, or the realm of one internally harmonized experience. The defects of our momentary internal purposes is that they imply an individuality, both in ourselves and in our facts of experience which we do not wholly get presented to ourselves in any one instant. Truth is known to and by an experience which is self-determined, organized, and absolute. Our ignorance and imperfection mean more than they contain, imply what is beyond them, assure us of a reality of truth where the unrealized ideas of finite selves find fulfillment.

We may sum up the above presentation of the absolute idealist's notion of truth by stating that, *according to the coherence theory, an idea is true to the extent that it is consistent with other ideas already accepted as true, whether these accepted ideas refer to past, present, or future events.* If an idea will not fit into the context of our knowledge, then it is false, or else our knowledge, already attained, is defective. If somebody should tell us that chocolate candy will cure baldness, we should label his assertion as false, because it does not coincide with the knowledge we have either of candy or baldness. The statement, however, that chocolate candy may increase our bodily weight is accepted as true, because it is in keeping with our ideas of candy as a food and with our notions of our physiological processes.

The more ideas with which we can show a certain conception to be consistently related, the greater the truth of this conception. The ideal of truth, of course, would be to understand how an entity is related to all features of the universe. This attainment is naturally impossible for finite minds; it represents the appreciation of things and of their interrelatedness which characterizes the experience of the Absolute Mind, or God.

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[5] See "The World and the Individual," Series I, Lect. VII. (The Macmillan Co., 1901.)

A judgment that is true, according to the coherence theory, may be consistent in two respects: (1) *consistent with itself,* and (2) *consistent with other judgments.* To put the matter another way, true judgments must not violate the laws of thought which we discussed in a previous chapter. A true judgment must be one which refers to an object which cannot be and not be at the same time. A thing that is true cannot be something else at the same time. We often speak of a true personality as one which possesses *integrity;* there is a oneness, a *dependability* about the character of such a selfhood. That two plus two equals four is a truth the same yesterday, to-day and forever. If a term means one thing at one time and another thing at another time, either it is falsely used or it is ambiguously used. In either case, its use is not helpful to the cause of truth. The word *fast* may mean *speedy* or it may mean *tied,* but if in the two assertions, *the horse is fast* and *the horse is not fast,* it means the same thing, then one of the statements is true and the other necessarily false. Both cannot be true.

True judgments must not only be self-consistent, they must also be consistent with other judgments. A thing cannot be true if it contradicts its own nature, but no more can it be true if it contradicts the nature of something else which is true. Two plus two equals four cannot be true in a world where two plus two equals five. An individual may possess a true character in the sense that he possesses integrity and dependability, that is, is self-consistent, but he can never be truly called a true self if he handicaps the integrity of others. The notion that the sun revolves about the earth is self-consistent, but it has been replaced by the conception that the earth revolves about the sun, because the latter idea is not only self-consistent, but also is consistent with a wider body of facts.

2. **Criticism of the coherence theory.**—In the first place, the coherence theory is attacked because it is impractical as a working standard of truth. It may be true that we shall know the truth when we understand the infinite relationships which objects in the world have with each other. It is not possible, however, for us ever to arrive at truth in this sense. If we have to wait until we ascertain the universal implications of a fact before we are certain of its truth, we shall never attain certainty. The norm of truth presented in the coherence theory is so ideal and difficult of attainment that it leads to skepticism regarding the ability of man to have certainty in knowledge.

The exponent of coherence answers this charge by asserting that a denial of the standpoint does not help one practically, whereas to deny the unity and comprehensiveness of knowledge does rob one of a position esthetically and religiously satisfying. The absolutist admits that complete truth is possible only for the Absolute Experience, or God, but he insists that there are degrees of truth. The notion that man may attain some truth, if not the whole truth, is developed by H. H. Joachim in the following passage:

> We cannot experience the whole completely and adequately, just in so far as we are not ourselves complete. But because we are not complete, it does not follow that we are divorced from the complete and in sheer opposition to it. We are not absolutely real, but neither are we utterly unreal. And because our apprehension is restricted, and in part confused, it does not follow that it is utterly false and an entire distortion of the nature of things. The categories which we have to employ are no doubt inadequate to express the complete reality; but this is no reason for not employing them at all, or for employing them all alike and indifferently. For they all to some extent express the whole; and there are degrees in the relative adequacy of self-expression.[6]

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[6] "The Nature of Truth," p. 81. (Oxford University Press.)

The believer in the coherence theory does not deny that thought arises in a particular situation to meet a specific demand. He also readily grants that thought is not true, if it does not provide a workable method of meeting the difficulty. The practical, for the proponent of coherence, is, however, but one feature of the more ultimate standard of truth, namely, harmony with experience as a whole.

A second objection to the notion of coherence is that perfect coherence is possible in a system of ideas which are false to actual, concrete facts or which are irrelevant to the everyday world about us. We may have a system of geometry, possessing more or less than three dimensions, which would present judgments thoroughly consistent with each other. Such a geometry, however, would not be completely true. Consistency must imply correspondence of theory to fact before even consistency can be valid. Again, it is possible to conceive of a theological system which, in its views of God, nature, man, revelation, would develop only harmonious notions, but the notions, however consistent with each other, would not correspond with the actual conditions of cosmic or human nature. In other words, coherence must be a complete coherence; it must involve factual correspondence as well as logical consistency. Coherence means that we have truth when there is harmony between all the ideas in our fund of experience, but it must always be recognized that this coherence is meaningless and futile if the ideas interrelated do not refer to empirical realities.

The third objection to the coherence theory points out that the notion is self-defeating. Since, according to the coherence theory, no isolated and particular proposition is wholly true, then the conception of coherence, a specific notion, cannot be true. The test of coherence cannot be itself tested by the test of coherence. The exponent of coherence will reply that this sort of an objection can be made to any test of truth. We have to assume the validity of the criterion with respect to itself, even though it cannot be demonstrated.

Other criticisms of the coherence theory might be mentioned here. It is called a theory of reality which denies the validity of change, growth, manyness, finitude, variety, and analysis. We shall not take up this blanket criticism now, because it receives full discussion later in our treatment of singularism.

C. The Utility Theory of Truth

To discuss the position which holds that the truth of a judgment lies in its satisfactory consequences is to discuss the doctrine of the pragmatists. The term is developed from the Greek word πράγμα, which means *action.* Among the pragmatists we find Charles Peirce, John Dewey, and William James of America, F. C. S. Schiller of England, Henri Bergson of France, Giovanni Papini of Italy, and Hans Vaihinger of Germany. These scholars differ in the extent to which they regard pragmatism as an exclusive and completely satisfying philosophy, but all are in agreement regarding the superiority of pragmatism in a consideration of the test of truth. For all of these thinkers, however, they may differ on ontological and theological issues, truth, at last, so far as it is the result of intellectual effort, is the property of workableness in our ideas.

1. **The essential features of the utility theory.**—For the pragmatist, the truth of our ideas is to be measured in terms of their consequences for proficient living. Pragmatism, whether designated by Schiller's term, *humanism,* or by Dewey's term, *instrumentalism,* is a protest against the superhuman character of truth, according to absolutism. The notion of an all-inclusive Experience, identical with reality, is logically false to some of the pragmatists, and futile from the standpoint of all. Pragmatists are pluralists, empiricists, evolutionists, and consequently object to the singularistic, intellectualistic, and static aspects

of truth, as truth is depicted according to the coherence theory. The pragmatist bases his point of view upon the biological, psychological, and social sciences, whereas the absolutist uses the logical, ontological, and theological disciplines as the foundations of his position. The pragmatist is interested in temporal events and activity, while the exponent of coherence is largely concerned with eternal verities and appreciation. The standpoint of the pragmatist is melioristic and democratic; the theory of coherence is quietistic and aristocratic. The pragmatist would control; the absolutist would contemplate.

There is significant agreement between the two theories, however. Pragmatism, at least that of James, permits acceptance of absolutism by those for whom such acceptance would mean more adequate living, and absolutism acknowledges that, however coherent a system of propositions may be, they cannot be true unless they are consequential for personal experience.

It may be interesting to indicate a few specific instances of the pragmatic notion of truth. The pragmatic movement is as old as the empiricistic, positivistic, evolutionary tendencies in the history of philosophy. The sophists of ancient Athens knew well the principle that the truth of ideas is calculable in terms of personal and social profitableness. James calls pragmatism a new name for old ways of thinking. Kant is the chief thinker in modern philosophy whose doctrines are credited with being anticipatory of and productive of the pragmatic emphasis. Kant's conception of the categories as the forms and foundations of scientific knowledge exalt human experience as legislative over nature just as significantly as do the hypotheses discussed in the pragmatic theory of intelligence. Furthermore, Kant's postulates of God, freedom, and immortality represent as adventurous a notion of mind as any ''will to believe'' discussed in pragmatism.

Charles S. Peirce, however, is given credit for presenting the first definite statement of pragmatism. It was found in his famous article "How to Make Our Ideas Clear," which appeared in *The Popular Science Monthly* in 1878. In this essay Peirce argues that if we are rational we will support ideas that bear upon the conduct of life. In his judgment, to understand an object means to have knowledge of all the practical effects which the object will have. Peirce champions the cause of experimental method as a way to truth, but, for him, experiment is not an end in itself. Truth is not measured in terms of changes in the outward environment; these external modifications are part of the means by which we arrive at truth, which is an internal state of mind. As A. K. Rogers interprets the theory of Peirce, "Truth is the mental state at which inquiry aims, the satisfied feeling that ensues as we pass from doubt to settled belief,—not any satisfaction at random, but the satisfaction which *would* ultimately be found if the inquiry were pushed far enough, and whose experimental equivalent, or meaning, is the consensus of opinion among qualified investigators."[7]

William James developed the position of Peirce into an elaborate and popular conception of truth. He differs from Peirce, however, in his idea of what satisfactoriness implies. For Peirce, the mental state incident to a truth situation betokens an appreciation of the fact that the practical consequence is consistent with the universal principle involved. The satisfaction is that over a compliance of particular with the general; it is a logical achievement. For James, the satisfactoriness of the truth situation is psychological. It represents a heightened and enhanced consciousness. An idea is true for James, not if it works as proving coherent with the laws of nature; it is true if it works in the sense of promoting the moral, esthetic, or religious interests of man. For James, the truth of an idea depends largely upon the temperament of the individual to whom the idea is addressed. With regard to the great fundamental issues of philosophy, where human intelligence cannot give us decisive direction and where it would be inhibitory to the most satisfying experience to stifle belief, James argues that we have the right and should have the will to believe.[8] His thesis is this: *''Our passional nature not only lawfully may, but must, decide an option between propositions, whenever it is a genuine option that cannot by its nature be decided on intellectual grounds; for to say under such circumstances, 'Do not decide, but leave the question open,' is itself a passional decision,—just like deciding yes or no,—and is attended with the same risk of losing the truth.''* [9]

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[7] "English and American Philosophy since 1800" (1922), p. 361. (By permission of The Macmillan Co., publishers.)

The following selections from James's little volume ''Pragmatism'' present the outstanding conceptions in the pragmatic theory of this great American thinker: What is meant by the pragmatic method? ''The attitude of looking away from first things, principles, 'categories,' supposed necessities; and of looking towards last things, fruits, consequences, facts.''[10] What is truth? ''The true is the name of whatever proves itself to be good in the way of belief, and good, too, for definite, assignable reasons.''[11] ''The 'true,' to put it briefly, is only the expedient in the way of our thinking, just as the 'right' is only the expedient in the way of our behaving.''[12] ''True ideas are those that we can assimilate, validate, corroborate, and verify. False ideas are those that we cannot. . . .'' ''Truth *happens* to an idea. It *becomes* true, it is *made* true by events.''[13]

So much for the pragmatism of William James. Let us now pass to a consideration of the theory of the other great American pragmatist, John Dewey.

James and Dewey are at one in their hostility to intellectualistic doctrines which make truth mere agreement with a reality which, in perfect splendor and proficiency, lies beyond any power of human knowledge to alter or embrace. There are certain important differences, however, in the points of view of these two thinkers. The pragmatism of James emphasizes the subject in the epistemological circumstance; the pragmatism of Dewey is concerned with the objective aspect of experience. For James, satisfaction means better mental states; for Dewey (to pun) better political states. James is an individualist; Dewey is a collectivist. For the former, we live to know; for the latter, we know to live. For Dewey, more than for James, consciousness is an instrument of biological survival. James thinks of the true idea as one which will resolve difficulties in the world of ideas; for Dewey, true ideas solve problems in the non-mental, physical, and social spheres. James acknowledged indeterminism; Dewey thinks of intelligence as determined by biological situations even when the situations are provocative of creative responses.

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[8] See ''The Will to Believe.'' (Longmans, Green and Co., 1912.)

[9] *Ibid.*, p. 11. (Italics in the original.)

[10] ''Pragmatism,'' pp. 54, 55. (Longmans, Green and Co., 1907.)

[11] *Ibid.*, p. 76.

[12] ''The Will to Believe,'' p. 222.

[13] *Ibid.*, p. 201.

The following quotation is significant of Dewey's thought:

> If ideas, meanings, conceptions, notions, theories, systems are instrumental to an active reorganization of the given environment, to a removal of some specific trouble and perplexity, then the test of their validity and value lies in accomplishing this work. If they succeed in their office, they are reliable, sound, valid, good, true. If they fail to clear up confusion, to eliminate defects, if they increase confusion, uncertainty, and evil when they are acted upon, then they are false. . . .
>
> Confirmation, corroboration, verification lie in works, consequences. Handsome is that handsome does. By their fruits shall ye *know* them. That which guides us truly is true—demonstrated capacity for such guidance is precisely what is meant by truth.[14]

To Dewey, as he argues repeatedly in "The Quest for Certainty," most of our intellectual problems, not only in the realm of epistemology, but also in the fields of morality and religion as well, are due to the traditional "assumption of the antecedent inherent identity of the actual and the ideal." Instead of making ideal the actual through the reconstructive work of his own creative intelligence, man, either from technological incompetency or from theological complacency, has accepted the view that "the ideal is already and eternally a property of the real." Mind has been regarded as an inner activity, complete within itself, and detached from the chaos of the outside world of stubborn, brutal facts. Practical behavior, therefore, assumed an inferior and mundane rôle because it dealt with the realm of change and error. Practical action was far removed from the sphere of the rational, in which true, perfect Being is disclosed. The consequence has been that the logical, ethical, esthetic, and religious values, conceived in this otherworldly realm of knowledge, have mere academic interest. They are useless as guides to the conduct of flesh and blood human beings. True knowledge is just a "spectator" of perfect systems, whose perfection is prior to all acquaintance with them; mind is but an *appearance* of the real.

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[14] From "Reconstruction in Philosophy"; quoted from Joseph Ratner, "The Philosophy of John Dewey," pp. 216, 217. (Henry Holt and Co., 1928.)

Against this aristocratic tradition of knowledge, Dewey champions the cause of a democratic epistemology. The question, insists Dewey, is not whether or not our experiences refer to perfect antecedents in the realm of ontological Being, but whether or not they may refer to perfectible consequents in the level of human relationships:

> "Thought" is not a property of something termed intellect or reason apart from nature. It is a mode of directed overt action. Ideas are anticipatory plans and designs which take effect in concrete *re*constructions of antecedent conditions of existence. They are not innate properties of mind corresponding to ultimate prior traits of Being, nor are they *a priori* categories imposed on sense in a wholesale, once-for-all way, prior to experience so as to make it possible. . . . The experimental practice of knowing, when taken to supply the pattern of philosophic doctrine of mind and its organs, eliminates the age-old separation of theory and practice. It discloses that knowing itself is a kind of action, the

> only one which progressively and securely clothes natural existence with realized meanings. . . . Ideas direct operations; the operations have a result in which ideas are no longer abstract, mere ideas, but where they qualify sensible objects. The road from a perceptible experience which is blind, obscure, fragmentary, meager in meaning, to objects of sense which are also objects which satisfy, reward, and feed intelligence is through ideas that are experimental and operative.[15]

To the criticism that pragmatism, or better, instrumentalism, is not worthy of the philosophical spirit because of its emphasis upon action, Dewey replies that it is, in a profound sense, less practical than the traditional, theoretical theory of knowledge. The "spectator" theory of knowledge assumes definite, fixed ends; it is the doctrine which stands for efficiency and mechanical practicality. The pragmatic theory, however, vouchsafes no such security in the knowing process. It is adventurous and prospective, dealing with a world which has not definite categories to which it can subscribe. "A pragmatic intelligence is a creative intelligence, not a routine mechanic." [16]

2. Criticism of the utility theory.—Pragmatism is commendable in insisting upon the satisfactory character of truth. Man would not long seek the truth, if true knowledge meant chaos and pain. It is, however, a different thing to believe that an idea is true because it works from believing that it works because it is true. These two beliefs are not the same. To believe the first is falsely to convert the meaning of the second. We cannot say that all ideas that work are true any more than we can say that because all horses are animals, all animals are horses. Workability of ideas is more a test of their value or usefulness than a criterion of their truth. The utility of ideas, however, does provide a good instrument for the evaluating of our intellectual life. Hypotheses, ideals, hopes, or memories which do not refer to objective existents in a way that we can control them, or which do not bring to our inner consciousness feelings of enjoyment, should not receive our attention. Furthermore, ideas as they are expressed in institutionalized life, as in the work of the state, school, or church, cannot expect to be furthered when they hinder societal progress. The testing of truth in terms of the utilitarian standard of service to human welfare does prevent futile fanaticisms and utopianism in our community life.

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[15] "The Quest for Certainty," pp. 166, 167, 168. (Minton, Balch and Co., 1929.)

[16] Ratner, "The Philosophy of John Dewey," p. 220.

As a test of the worth of ideas, however, the pragmatic standard is not altogether reliable. Many ideas are true which seem to make little difference to human experience, at least so far as its future values are concerned. What great difference does it make to the richness of human life whether Heraclitus was born in 563 or 562 B.C.? There must be a true date whatever we think about it. Again, false ideas often give great emotional satisfaction to some people. Certain legends extolling the exploits of great religious, political, and military heroes, benefit the thought and lives of thousands of people, although the events in the legends are purely mythical. If the answer is made that the pragmatist means that that idea is true which works for the greatest number of people in the greatest number of situations, for the longest time, we can gladly welcome his explanation of utility, but we would have to point out that in extending satisfaction to include so many factors he is really giving up the notion of pragmatism for the position of the coherence theory.

Again, the pragmatist talks a good deal about changing the environment and creating reality. He forgets that we are largely the result of our environmental situations. Many features of our experience cannot be altered. If a truth persistently works, it gives us the conviction not merely that we have arrived at an idea that is true but that we have found out something about the external, nonhuman environment about us. The pragmatist forgets that not everything in the world changes. If he thought everything was in flux, even his own theory would have to be modified and thus lose its self-consistency. That two plus two equals four is but an instance of the immutability of mathematical and moral principles. Again, the past is gone. We cannot change it; we can only understand and appreciate it.

The pragmatist insists too strenuously upon the biological function of consciousness. Intelligence is an instrument of survival, no doubt. But civilized man has long since past beyond the stage where he thinks only to live. He now lives to think. The realms of art, science, literature, philosophy, and friendship in which he delights are not fields which he enters to raise his metabolic level or to continue the species. These two benefits may accrue, but cultural enjoyment is appreciated for its own sake and not for any ulterior purpose—that is, in the true lover of truth, goodness, and beauty. A philosophy that should emphasize purely the biological values might easily lead to a repudiation of the altruistic in life and to an exaltation of the principle of the survival of the fittest. The individuality of private selves would be sacrificed to the well-being of that mythical but dominating entity, the commonweal.

Even though pragmatism cannot give us the all-inclusive and complete account of truth, it has several meritorious features. Its futuristic aspect—that is, its emphasis upon the days to come—is encouraging to moral endeavor and destructive of introspection and morbidity over the past. Its humanism provides a good standard for the practical testing of new political, economic, and social policies. Its utilitarian interest in the greatest good for the greatest number will make for a safer, healthier, and more orderly world in which to live. It will inhibit fanciful and foolish romanticisms and will replace compensatory escapes into a make-believe sphere by a common-sense concern for the matter-of-fact everyday world. Its adventurousness, freedom, sincerity, and industriousness will always be stimulating to the scholar of apathetic mold.

D. THE INTERPRETATION THEORY OF TRUTH

Just a few remarks in conclusion. Truth we have taken to be the property of a judgment which refers to the situation that the mental or subjective aspects of the judgment adequately portray the physical or objective features. We have to assume a connection between the ideational and the external factors. This assumption is supported by the criterion of self-evidence. That consciousness refers to the non-conscious is an implication of conscious experience itself. The sensations, perceptions, images, and hopes are sensations (and so on) of something; they always have an objective reference of which we are immediately and intuitively aware. Our problem is to ascertain how adequate the *correspondence* is. The *coherence* and *utility* tests are our instruments for gauging the proficiency of our judgments. Both of these standards involve reflective activity on our part. The coherence notion calls us to ascertain the extent of the consistency between the subjective factors of experience. The utility conception stresses the need for intellectual awareness of the nature of the outside feature of experience. Only that truth can be recognized and appreciated in which both criteria are harmoniously applied, when knowledge as systematic in mind is found also to be knowledge which is symptomatic of matter. To state the need of this bearing between the consistency and utility of knowledge is, of course, to treat the coherence idea as the more inclusive and more important standard. It is also to present a standard of truth which requires the intercommunication of many minds. Truth thus becomes the goal of a community of interpretation. Not in one individual, not in one state, not in one age, but in the cultural history of the race the truth of natural and human events is increasingly disclosed to the knowledge of man. Inasmuch as the notion of coherence we endorse involves the attainment, correction, and extension of ideas in a community of selves who are, to and for each other, interpreters of the truth, we call our doctrine the *interpretation theory.*

The type of coherence theory in which we believe is one, furthermore, which recognizes, with the pragmatist, that the stimulating environment of knowledge is not a static Being, but a dynamic, living world. Emphasis on consistency, therefore, must never be allowed to prevent the acceptance of newer ideas which arise in the intelligence of man, as, in intellectual fellowship with others, he grows in appreciation and understanding of the engaging cosmos.

In closing we would suggest three characteristics of truth: *oneness, wideness,* and *workableness.* When our knowledge, arrived at by observation, experiment, introspection, intuition, or reason, discloses these marks, it must be fairly close to things as they really are.

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PART THREE

THE PRINCIPLES OF COSMOLOGY AND THE NATURE OF REALITY

Chapter IX

THE STRUCTURE OF THE MATERIAL WORLD

HAVING completed our discussion of the way in which philosophical knowledge works in its interpretation of the world about us, we are now ready to examine the world itself. In what sort of a universe do we live? The next two parts of the present work deal with this great question. The latter half of the book, therefore, is concerned with the baffling issues usually embraced under the term *metaphysics*. The part with which we are now engaged considers the problem of the world at large, a problem generally included in the fields of *cosmology* and *ontology*. Cosmology has to do with the structure of the universe and with the method by which it changes. Ontology treats the question of the cosmos from the standpoint of the qualitative and quantitative character of its fundamental substance. Chapters IX to XII deal with questions of cosmology; Chapters XIII and XIV deal with the specifically ontological questions. We are following a common usage, however, and are regarding ontology as a term, not coördinate with, but subordinate to the more inclusive term *cosmology*.

The fourth part of the book examines the metaphysical problems regarding the nature of the self, values, and God, —issues technically allocated to the branch of philosophy already defined as *axiology*.

Let us now turn to our first question in the cosmological inquiry—the structure of the material world. We therefore plunge right into the presumptuous undertaking of an investigation of reality.

Upon the questions, What is reality? or, How should reality be defined? it is not easy to give a satisfactory answer. There are different views among philosophers on these questions. William James gives practical counsel when he says: "Anything is real of which we find ourselves obliged to take account in any way. Concepts are thus as real as precepts, for we cannot live a moment without taking account of them."[1] Professor J. A. Leighton uses the term *reality* to designate "anything that really exists, whether in the physical world or in minds."[2] On either of these views it is clear that he who would know reality must know something about the physical order of existence.

The first science to develop subsequently to the formal science of mathematics was astronomy, and, after this, physics. The child and primitive man, we have noticed, are first attracted to the objects of the outer world. The objects of the physical world and their changes were naturally the first to be studied scientifically. Through the outer senses the objects and processes surrounding man were observed and the regularity or irregularity of their changes noted. The inner emotional experiences of man were vivid and strong, but because of their instability and elusiveness they could not be so easily studied as outer objects. Thus it was that social and psychological studies had to await the testing out of methods and principles of the outer physical world.

I. The World of Astronomy

Astronomy, the second oldest of the sciences, exhibits some of the greatest triumphs of modern scientific knowledge. Although keenly sensible of its imperfection and incomplete knowledge, this science, by the aid of the telescope and spectroscope,[3] is revealing some of the natural wonders of the modern world. With the naked eye one can see about four thousand stars. By means of a photographic plate in one of the largest telescopes several hundred million stars may be viewed. Just how many stars there are, no one knows. Astronomers now talk about universes, our own solar system with its sun, nine planets (including planet X, discovered Jan. 21, 1930), numerous asteroids and comets being but a small family in the midst of the millions of stars which compose *our universe.* These other universes make their appearance in the heavens as spiral nebulæ or ''island universes.'' Each of them is made up of millions of stars or suns, many of which may have planetary families like our own sun.

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[1] "The Philosophy of William James," Horace M. Kallen, p. 94. (Modern Library Edition, 1925.)

[2] "Man and the Cosmos," pp. 29–30. (D. Appleton and Co., 1922.)

[3] The spectroscope is an instrument for breaking up light into its constituent parts. Since every chemical element when aglow with heat emits its

The Earth is the fourth smallest of the nine planets of the Sun, Mercury, Venus, and Mars being still smaller. Its diameter is 7,918 miles and its circumference is about 25,000 miles. It is about 93,000,000 miles distant from the sun (the average distance being 92,930,000 miles), around which it moves in an orbit of 580,000,000 miles at a speed of more than a thousand miles a minute. The Sun is a star among the one-to-two million stars in our galactic system and is a little off center (a few hundred billion miles) in this system. Although 866,000 miles in diameter, the Sun is much smaller than many other stars and, because of its dull color, is regarded by astronomers as burning out. Betelgeuse, for example, the leading star in Orion, was measured on Mt. Wilson in 1920 and found to be 250, 000,000 miles in diameter, almost large enough to fill the orbit of Mars and allow the Earth, Venus, and Mercury to travel around in their orbits inside. Traveling at the rate of 186,000 miles a second, light comes to the Earth from the Sun in about eight minutes, but requires about four and one-half hours to travel from the Sun to Neptune. The nearest star to the earth, a star recently discovered,

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own characteristic colored light, and since almost every heavenly body emits light, the chemical nature of heavenly bodies may be studied. The gas helium, discovered in the sun by Sir Norman Lockyer, was not found in the earth till thirty years later, by Sir William Ramsey, in 1895.

is about twenty-five trillion miles away, and only thirty stars are known to be within a hundred trillion miles of the earth, while only a few hundred stars are within five hundred trillion miles of the earth. The distant stars of the Milky Way are thought to be at least a hundred thousand trillion miles from the Sun.

Under the growing knowledge of the stellar spaces astronomers have been forced to abandon the mile as the unit for measuring distance. They now employ the velocity of light—186,000 miles a second—for calculating the greater distances. Thus they now speak of "light years," a *light year* being the distance which a ray of light, moving at the rate of 186,000 miles a second, would travel in one calendar year. Stars invisible to the naked eye but revealed by the sensitive photographic plate in the great telescopes may now be located in distance from the earth. For example, our universe, which is about two hundred thousand trillion miles in diameter, requires light about fifty thousand years to cross. Four years are required for light to travel from the nearest star to our planet. A few years ago the Harvard Observatory announced the discovery of a new universe (Star Catalogue Number, N. G. C. 6822) six sextillion miles away, or one million light years distant. The same observatory on May 20, 1926, announced the appearance of another star, ten million times brighter than our Sun, and ten million light years away.

The vastness of our universe is utterly beyond our human comprehension. Yet it is but one among the many galactic systems of the vast stellar world. How modest a place after all has man on this little planet, the Earth! What is one hundred and fifty pounds of mass among such ponderous bodies? Yet it is to the mind of man that this wonder of the universes has been revealed.[4]

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[4] See J. Arthur Thompson, "Outline of Science," Vol. 1, pp. 7–53 (G. P. Putnam's Sons); Archibald Henderson, "The Size of the Universe," in *Science,* Sept., 1929.

II. The Nature of Matter

We have seen that man's view of the astronomical realm has undergone change and development. The same is true of man's thought of matter. Here also common sense has had to give way to more critical and scientific views. Let us turn to a brief consideration of some of these views.

A. HISTORICAL VIEWS OF MATTER

1. **The common-sense view.**—To the eye and the hand ordinary matter appears continuous. Common sense tells us that the desk or cement walk is a smooth, unbroken surface. Put a microscope on either of these objects and its smoothness and unbrokenness give way to roughness and discontinuity. Set fire to the desk and it is changed to gas, smoke and ashes. Subject the cement walk to natural or artificial erosion and it turns to dust, blown away by the wind. Now the matter in the desk or the cement walk is not destroyed; it has only changed its appearance and form. Common sense may not follow this view, but physicists have a theory called "the conservation of matter" which holds that all changes within a closed system of matter result in no increase or decrease of energy or mass. There are, of course, changes of quality evident to the senses, such as color, solidity, and weight. Moreover, a little reflection reminds us that the desk was once a board, a tree, and elements in the soil and atmosphere. The cement walk was once a pasty mass, and, before that, water, clay and ground limestone. Particular objects thus come into being and go out of being again. Matter, the stuff of these objects, however, seems to be relatively permanent.

A little inspection of the common-sense view of matter shows that matter is not a thing perceived at all. The matter which can undergo so many changes—as, for example, water, which may change from a solid to a liquid, to steam or vapor, and back to a solid again—is not to be identified with anything that can be seen or felt. Matter is a concept, a general idea which unifies man's manifold and diverse experiences with its changing forms. Just how matter is to be conceived and defined has been the subject of inquiry by students of physical nature from the early Greeks to our own time. To-day it is one of the theoretical interests of physics to define the nature of matter.

2. **Views of the early Greeks.**—The earliest reflections upon physical nature in our Western civilization appear in the sixth and fifth centuries B.C., and are offered by a group of Milesian physicists, as Aristotle called them. Their names are Thales, Anaximander, and Anaximenes. These men were members of a Greek colony in the seaport town of Miletus, off the coast of Asia Minor. Thales held that the basic substance of things is water. He was, no doubt, impressed with the vast quantity of water in the Mediterranean region, also with the fact that water is an important constituent in so many objects of nature. Anaximander held that the ultimate stuff of things is an infinite and boundless space-filling substance, ἄπειρον. Anaximenes believed that it is air. What is common to the views of these men is that the ultimate substance of things is *one.*

Men soon appeared who questioned this doctrine. Empedocles (495–435 B.C.) advanced the view that there are four original elements—namely, earth, air, fire and water—uniting and dividing under the influence of ''love'' and ''hate'' (attraction and repulsion). Anaxagoras (500–428 B.C.) taught that originally the world was filled with infinitely small particles of matter which he called germs or seeds, and that these were given motion and orderly arrangement into objects by the substance *mind* (νοῦς). Leucippus and Democritus (about the fourth century B.C.) agree with Empedocles and Anaxagoras that the original stuff is *many* rather than one. For them, however, it is made up of small, compact, indivisible and invisible physical particles and empty spaces. These particles of matter they called *atoms.* These atoms were thought to be without beginning, indestructible and unchangeable. Objects were formed by the union of atoms, and the separation of atoms was synonymous with decay and disintegration. All of these early Greek thinkers were hylozoists; that is, they believed that the units of matter were alive.

Several significant points should be noticed in these early Greek views: (*a*) They mark an attempt to depart from the traditional explanations of physical nature and to establish a view founded upon reason. (*b*) Their explanations are in terms of the physical characteristics of nature, and in this sense are naturalistic. (*c*) The theory of matter passes from monism to pluralism. (*d*) There emerges the belief that the ultimate character of the elements is to be described quantitatively rather than qualitatively.

3. Notions of Plato and Aristotle.—Plato (427–347 B.C.) and Aristotle, his pupil (384–322 B.C.), are not only the most important philosophers in the ancient period, but, in the extent of their influence, they are to be ranked among the greatest minds in our civilization. It is difficult to separate the views of either Plato or Aristotle on matter from their respective theories of reality.

Plato would say of any particular object, that it is the union of *form* and *matter.* By *form* Plato means a pattern, type, plan, or idea; and by *matter* he means the formless stuff which takes on shape and meaning under the molding influence of the plan or idea. Nowhere does Plato make it entirely clear what he means by *matter.* Whether it exists apart from particular bodies, and whether the patterns or ideas exist (or subsist) apart from embodiment in matter, is not made entirely clear. However, Aristotle interprets Plato to hold that the ideas exist in a domain transcendent to the realm of sense objects, but they participate in objects of the sense world. Matter, which by itself is non-being or nothing, without quality and indescribable, becomes a particular object when it embodies an idea. The particular objects are, then, imperfect copies or representations of the original and eternal ideas.

Aristotle's view of matter pays more attention to the principle of evolution than does the doctrine of Plato. The oak tree, for example, is not to be defined in terms of what it is at any stage of its development, nor in terms of its relation to an ideal oak tree in the realm of eternal forms. It is to be regarded as a developing object, a being with a life history.

The acorn, the tiny shoot just out of the ground, the sapling, the full grown tree—each is to be considered in a definition of the oak. Now *matter,* in the case of the oak tree, is the potentiality for change; and *form* is not, as for Plato, something transcendent, but the immanent or indwelling actualizing principle. Take a block of rough marble. Here is so much *matter,* which may become, is the possibility of, any one of a thousand pieces of statuary. The sculptor gives it form as he chisels it under the guidance of his plan or pattern.

4. Modern views of matter.—Modern views of matter are sometimes the product of physics and chemistry with their mathematical and quantitative approach and sometimes the product of a more psychological and qualitative approach. The physical sciences had to wait for the invention of tools—namely, analytic geometry, devised by Descartes, and the infinitesimal calculus, provided by Leibnitz and Newton—before they could give what seemed at the time to be a purely objective view of matter. Sometimes the view of matter remains but a practical working hypothesis and does not become an integral part of a complete theory of reality, as, for example, in the theories of the physicists. Sometimes, as in the case of Descartes (1596–1650), it takes its place in a complete metaphysics.

a. Descartes' conception of matter, though philosophical, nevertheless also represents quite accurately the prevailing view among physicists in the sixteenth, seventeenth, and eighteenth centuries. Matter, for Descartes, has one fundamental characteristic, namely, extension. Matter is extended substance, extension being length, breadth, and thickness. This is just what is meant by *body*. *Extension, body,* and *space* are, then, merely different names for the same thing. Every body is a limited, spatial magnitude, infinitely divisible. Hence there are no ultimate parts or atoms, but *corpuscles,* or *molecules,* as we should say to-day. Motion is due to the impact or pressure of one body upon another, and it consists in the passing of a body from one place to another. The physical world is regarded as a thoroughgoing mechanism. Since there can be no action at a distance, a universal ether is assumed to explain the facts of gravitation.[5]

b. John Locke (1632–1704) approaches the study of matter psychologically and concludes that it cannot be known directly. What we perceive when we examine an object, say the desk, is such qualities as solidity, extension, figure, motion or rest, and number. Locke calls these primary qualities, and by *quality* he means the power to produce in us a sensation. These primary qualities are objective and independent of the mind that knows them. However, they have the power to produce in us such qualities as color, sound, taste, and odor, qualities which Locke calls secondary because they are the effect in us of the presence of the primary qualities. Now matter is for Locke an unperceivable *something* which is assumed to exist as the substratum or bearer of the primary qualities. It has an inferential or hypothetical status. Nothing can be known of its nature, because it cannot be perceived.[6] Locke's view of matter is similar to Descartes', except that for Locke solidity, not extension, is the chief characteristic of matter.

c. George Berkeley (1685–1753) also approaches the problem of matter psychologically. Accepting Locke's analysis of sense experience in terms of sensible qualities, Berkeley asks: Why not say that an object, say an orange, is just what it is perceived to be—yellowish red, sweet, round, soft, and so forth. These qualities as perceived together constitute the orange and are taken as one object. Other collections of sense qualities in the same manner constitute a stone, a tree, a book, a horse, or a building. Any bit of matter is nothing but a constellation of sense qualities which we perceive when we sense an object (*esse est percipi*—to be is to be perceived). There is nothing behind or beneath the qualities of the orange, if we stop where experience ends. Moreover, Berkeley believes that Locke's distinction between primary and secondary qualities is false because both kinds of qualities are gotten, not separately, but in the same experience. All qualities, therefore, are secondary, hence dependent upon the knowing mind. Berkeley thus clearly denies the existence of matter as an unknown bearer of sensible qualities. Matter is just the name which we apply in a common-sense way to the collection of objects in the physical world, and these physical objects upon examination turn out to be collections of sense qualities or ideas in the mind of the beholder.[7]

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[5] See "Descartes, Selections," edited by R. M. Eaton, pp. 289–301. (Charles Scribner's Sons, 1927.)

[6] See "An Essay Concerning Human Understanding," Book II, Ch. XXII, Sec. 2. (Open Court Publishing Co.)

d. Leibnitz (1646–1716) was a mathematician and a physicist. He examined the current Cartesian doctrine, which explained everything in the physical world in terms of extended bodies and motion, and found it inadequate to account for the continuity in nature. Physicists had come to accept the principle of continuity, the principle that nature makes no leaps. Bodies in motion exhibit a tendency to keep in motion, and bodies at rest tend to remain at rest. Thus, if there are no leaps in nature, there must be something which is continuous in the body through the changes of motion and rest. Leibnitz, therefore, substitutes the notion of a dynamic, psychic, or spiritual reality for the dead and static material stuff of Descartes and the physicists.[8] The element which continues through the changes which a body undergoes, Leibnitz held is *force.* Thus *force,* and not extension, is the fundamental characteristic of matter. *A thing is what it does.* Another reason advanced by Leibnitz why extension cannot be the basic character of matter is that extended substance is further analyzable and divisible. What is made up of parts cannot be ultimate. Force, energy, or activity is simple and indivisible; it is the ultimate nature of matter. The law of the "conservation of motion," then, must give way to the law of the "conservation of force" or energy.

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[7] See "Principles of Human Knowledge," Sec. 6. (Open Court Publishing Co.)

Now the units of force or energy Leibnitz named *monads.* A monad is not to be thought of as a mathematical or physical point, but rather as a metaphysical unit. Like the atoms of Democritus, Leibnitz's monads are eternal, infinite in number and the same in quality. They differ, however, in that while Democritus' atoms were physical in quality, Leibnitz's monads are mental or physical in character. They differ among themselves, further, in that they vary in mentality or *power of perception.* Organisms, for example, are made up of monads of higher mental power than inanimate objects, and they embody a queen or organizing monad. There are thus planes or levels of monads. Material things, moreover, are made up of constellations of monads, or centers of force, so arranged as to impress the sense organs with sensations of specific quality and the experience of concrete physical objects.

e. General conceptions of matter in modern philosophy. There are, then, at least three distinct ideas respecting matter which came to have general acceptance in the modern scientific tradition: (1) The idea of *infinitesimal and, so, imperceptible constituents of matter.* The real and minute changes in nature are, in consequence, not open to observation, and hence are somewhat mysterious. (2) The second idea or principle is the constancy of nature, that the *parts of nature behave uniformly.* This explains why it is that so often natural processes can be reversed, as for example, in chemistry. (3) The third idea is that *there are different kinds of elements or constituents in nature.* Chemistry now teaches that there are ninety-two chemical elements, ninety of which are known. Physics, however, with its electron theory of matter, tends to reduce all physical things to kinds of electricity—the *proton,* which is a positively charged particle, and the *electron,* which is a negatively charged particle moving around the proton. Professor Arthur Compton, of the University of Chicago, now (1928) adds a third element or particle, which he calls a *photon,* or the life of the atom.

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[8] See H. Wildon Carr, "The General Principle of Relativity," pp. 134–135. (The Macmillan Co., 1920.)

Before concluding this section on the modern views of matter, it may be well to offer a word of explanation on three important working concepts in physics which have to do with matter. In the earlier history of theoretical physics any object which possessed the three characteristics of extension, gravitation, and inertia was regarded as material. Anything which did not have these characteristics was regarded as immaterial.

(1) *Extension,* for the older physicists in the modern period, meant a static character of length, breadth, and thickness. Later and in contemporary physics, in which matter is thought of as made up of dynamic elements (for example, electrons), extension is regarded as only an appearance resulting from the activity of the constituent elements.

(2) *Gravitation* has always been somewhat mysterious. It appears to be an active power which causes all bodies to move toward one another. Among celestial bodies this power acts in direct ratio of the masses and in inverse ratio of the squares of the distances from the center of the masses. This power is called *attraction* when we refer to the center of the bodies in question, *gravitation* when we

refer to the bodies themselves which fall to the center. Under the electron theory of matter, and in harmony with the Einstein principle of relativity, gravitation is due to the curvature of space-time.

(3) *Inertia,* like gravitation, is very difficult of explanation. Inertia, as employed in physical science, means that property in virtue of which matter cannot of itself change its state of motion or rest. Hence the inertia of a body is the resistance which it opposes to any change of its state, whether of rest or motion. From these statements, it is clear that inertia is not a static quality of matter, but a dynamic aspect. It means that a body is always doing something, whether in motion or at rest. Inertia thus stands for a persistent type of activity always present in a body or bit of matter. Extension, gravitation, and inertia as characteristic of matter all stand for dynamic rather than static qualities of material things.

5. **Recent views of matter.**—The conceptions of matter which we have thus far been studying were the result of both critical observation and philosophical speculation. Little of what is now known in science as analysis and experimentation was involved. The views which now obtain in chemistry and physics are the products of years of research and experimentation. The recent conceptions are so significant that they deserve the prominence of separate, main sections in our discussion. Two notions stand out: the nature of the atom, and the problem of space and time.[9]

B. THE WORLD OF THE ATOM

That matter is granular in structure is a view as old as Leucippus and Democritus (4th century B.C.). Leibnitz, in the seventeenth century, also advanced a granular view. John Dalton (1766–1844), a chemist, was one of the earliest scientists to advance a definite theory of matter on an atomic basis, with the measurable weights of some of the atoms. Chemistry now offers a list of ninety-two chemical elements, ninety of which are known and named. About fifteen of these elements were known to alchemists and philosophers before the day of chemistry. Eight of them, among them gold, silver and copper, were known even to prehistoric man. A few elements were discovered through accident by the alchemists in the Middle Ages. The rest, about seventy-five in number, have been discovered by chemists in the last two hundred years. The last element to be found was ''illinium'' (No. 61), discovered by Professor B. S. Hopkins of the University of Illinois in 1926.

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[9] See B. Russell, "The A B C of Atoms," Chs. I and II (E. P. Dutton & Co., 1923); Joseph McCabe, "The Marvels of Modern Physics," Chs. II, III, IX (G. P. Putnam's Sons, 1925); B. Russell, "The Analysis of Matter," Chs. III, XIV (Harcourt, Brace & Co., 1927.)

When these ninety chemical elements are arranged in order of atomic weight, beginning with hydrogen as No. 1 and ending with uranium as No. 92, two gaps or missing elements are found, namely No. 85 and No. 87. In 1871 the Russian chemist, Mendelieff, discovered what is called the ''periodic law'' of the elements. By chemical means one element can be removed from a compound and replaced by an equal number of atoms of another element. Upon weighing it can be determined whether the weight of the new compound is heavier or lighter, and thus by comparing the weights of the compounds the weight of one atom is compared with that of another. It has been discovered that the hydrogen atom is the lightest and that uranium, the heaviest, is 238 times as heavy. Taking the hydrogen atom as one, it was found that the weights of the other atoms were almost exact multiples of this unit. In accordance with this fact the chemical elements could be arranged in a series, with hydrogen assigned the atomic number 1 and uranium the atomic number 92. Accepting the principle of the ''periodic law'' as true, as it was even before many of the elements now known were discovered, light was thrown upon the properties of the elements missing from the series and aid given to their discovery. Possibly Nos. 5 and 87 will be discovered soon by the application of recent atomic methods, and chemistry will be able to offer a complete list.

Chemistry thus offers us a conception of matter in terms of the ninety-two elements varying in all except a few cases in their atomic weights. Physics, however, has gone farther and inquired into the structure of the atom. We now turn to some of the conclusions of theoretical physics.

1. **The structure of the atom.**—Stimulated by the successful researches of a French chemist, Professor Pierre Curie and his Polish wife, which resulted in the discovery of radium in 1898 (between 1898 and 1900 three additional radioactive elements—polonium, actinium, and niton were discovered, and it became known that uranium and thorium, previously known, were also radioactive, the English physicist, Sir Ernest Rutherford, and the Danish physicist, Dr. Nils Bohr, perfected a theory of the structure of the chemical elements by which every element in the series may be assumed to be made up of two kinds of particles. These two kinds of particles are called positive and negative electricity, each kind attracting its opposite and repelling its own kind. Thus the hydrogen atom, the simplest and lightest of all, is made up of a *nucleus* or center of positive electricity, called a *proton* and a negative charge of electricity, called an *electron,* moving around the proton as a center. Views differ as to whether this motion is clockwise or counterclockwise. The atomic number is equal to the number of electrons revolving about the nucleus. This number is equal to the number of electrons in the nucleus subtracted from the number of protons.

Since all the chemical elements are assumed to be made up of two kinds of electricity, positive and negative, that is, of protons and electrons, how on this basis are we to understand that they differ? It should be remembered that nobody knows exactly how the electrons are arranged in other atoms than the hydrogen. Even with helium, which has only two electrons, the mathematical problems are too difficult to be solved completely. So that when scientists come to atoms that have a multitude of electrons, they are reduced largely to guesswork. Yet scientists believe that the elements differ mainly in the number of protons and electrons which they contain, in the structure of the orbits of the electrons, and in the speed of the electrons. Helium, or element No. 2, contains two electrons revolving around a single *proton* nucleus. Lithium, or element No. 3, has three electrons which revolve about the nucleus. Uranium, or element No. 92, contains 92 electrons describing orbits about the nucleus. Most of the electrons move in elliptical orbits. The speed of the hydrogen electron is about 1,300 miles per second, while the speed of the uranium electron is believed to be in excess of 125,000 miles a second, approximating the speed of light.[10]

Now it will be remembered that no one has ever seen an atom, to say nothing of an electron. Atoms are so small that billions of them could crowd together on a pinhead. The electron is still smaller, its diameter being about one five-thousand-billionth of an inch. It would require five trillion electrons placed side by side to measure an inch. Each one weighs about one eleven-octillionth of an ounce. Professor Turnier D'Albe estimates the number of electrons in a human body as ten-nonillions. But according to Professor R. A. Millikan, this is a mere fraction of the number of electrons which pass through a sixteen-candle-power electric light every second. If these electrons are so numerous and their speed so rapid, how are they known? The answer is, by means of extremely sensitive photographic apparatus and spectrum analysis. By what is called a process of ''knocking out'' the electron of the hydrogen atom, the electron can be displaced from its orbit. This displacement of the electron can be photographed, as well as the electron's return, which will be accompanied by an emission of light. The hydrogen atom, like other atoms, has its characteristic light emission, known to the physicist by its wave-length. This can be studied by means of the spectrum.

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[10] See Russell, ''The A B C of Atoms.''

2. **The conception of the ether.**—Sir Oliver Lodge is one of the leading exponents of another theory of matter called the "ether theory." He gave an exposition of this theory before the British Association for the Advancement of Science on Sept. 6, 1927. It is now generally rejected by physicists, the ether being itself quite unnecessary in the electron theory of matter. Experiments made forty years ago by Albert A. Michelson of Chicago and the English scientist, Morley, to determine whether there exist such a thing as "ether drift," were negative. Accordingly it is assumed that ether does not exist. Other positive attempts to establish the existence of ether have failed.

Ether (as an hypothesis) came into existence to serve as a medium for the transmission of light. The atmosphere extending as it does only a few hundred miles above the earth, some medium was supposed to exist for the transmission of light through the vast interstellar spaces. The undulatory theory of light seemed to require ether. Explanations of physical phenomena such as light, sound, and heat which employed the undulatory theory seemed to require the existence of ether. In order logically to satisfy all requirements ether was supposed to be frictionless, a solid, incompressible, immobile, and capable of receiving stresses and strains. With Clerk Maxwell's electromagnetic theory of light accepted, a series of phenomena such as light, heat, electricity, X-rays, and wireless rays were unified, and the ether seemed, to some physicists, more necessary than before. Nevertheless, ether as defined embraces contradictory qualities and still refuses to show itself in answer to experimentation. Michael Faraday, the greatest of the nineteenth century scientists, abandoned ether as a principle of explanation and substituted for it an ultra-material substance called "lines of force," which he endowed with the power of transmitting radiation. The Einstein theory of matter dispenses with ether, as also does the view which explains matter in terms of space-time. Both accept some form of the electron theory. Sir Oliver Lodge, however, still clings to the ether theory (a view resembling Descartes') and contends that ether is the matrix out of which the sun, stars, the earth, and all living things on the earth, including man, were created. He does not deny the existence of electrical charges in matter, but he holds that the ether is more fundamental and original, the electrical charges for him being strains and stresses in the ether.

3. **The new quantum theory.**—The present stage of development in theoretical physics began with the discovery of the electron at the close of the nineteenth century. This meant a new atomic conception of matter, a view not so much as guessed at in 1890. About 1900 Planck, a German physicist, by assuming that energy is atomic in structure, or that it is made up of units (quanta), was able to clear up the difficulties encountered in the different theories of black-body radiation at that time. In 1905 Einstein extended the ideas of Planck and assumed that the energy of the quanta existed as a ''bundle'' in order to explain the photo-electric effect. Then in 1913–1915 the Bohr-Sommerfeld theory of the atom combined the three concepts, electron, quantum, and relativity, to explain the observed complex structure of various spectra.

Thus the era of the atom as a planetary system was ushered in. Electrons were regarded as having various forms of orbital motion about the central nuclei or protons, even in some instances spinning on their axes. But the planetary model of the atom was soon found to be lacking in adequacy, partly because the picture or model became unduly complex for the heavier atoms, partly because physicists wanted experimental and measurable data, and the planetary model failed to give them. Accordingly the era of the planetary model of the atom is yielding to a mathematical-function period, and in this physicists are now working. Since the atom, to say nothing of the electron, is not susceptible to direct observation, and the atom is an intellectual construct based upon empirical data, the mathematical-function method is chosen as more in harmony with the exact methods of physical science. Several brilliant mathematical physicists, among them Heisenberg, Born, de Broglie, Dirac, and Schroedinger, are confining their efforts to an analysis of the atom in terms of measurable and mathematically determinable factors.

Certain important features of the new quantum theory of matter may now be mentioned: First, not only is matter now regarded as made up of infinitesimally small particles or ''drops'' of electricity, but there is an atomicity in the way energy acts on matter in the world of the atom. For example, when light acts upon a camera film, the light cannot be shut off in intensity to *anything* this side of nothing. Thus light is atomic or granular in structure; it appears to be composed of indivisible ''drops,'' or *quanta,* and not of a continuous stream of radiation. These quanta are not all of the same size. The amount of energy in a single quantum is dependent upon the frequency with which the ''particle'' is vibrating. The more rapid the oscillation of the ''particle,'' the greater is the minimal amount of energy transferred.

Second, the new quantum theory of matter involves what Heisenberg calls the *principle of uncertainty.* In substance, the principle means that when dealing with the infinitesimal parts of matter physicists are forced to accept indeterminism, a principle which Eddington says seems to rank in importance with the principle of relativity. From the time of Copernicus, Galileo, Kepler, and Newton in the sixteenth and seventeenth centuries, physical scientists have accepted a mechanical and deterministic view of the physical world. Biologists and psychologists have made extensive use of this mechanistic conception in their own fields. However, with the recent development of physics, especially since 1925, it is seen that physical laws, like social laws, are in the nature of statistical averages. That is, the laws hold only for the aggregates of the infinitesimal parts of matter and not for the parts taken separately.[11]

The indeterminism in the microscopic realm of the atom can be explained through an illustration. Consider an electron at rest. In order accurately to locate the position of the electron, it is necessary to illuminate the electron with very short electromagnetic waves. According to the quantum theory, the interaction of the electromagnetic wave with the electron results in a change in wave length of the wave (or the equivalent, a reduction in the energy of the quanta) and an increased or changed momentum of the electron. This effect has been verified experimentally in two cases, for very short waves—X-rays (the Compton effect)—and for waves in the visible spectrum (the Raman effect). In order accurately to determine the position of the electron it is necessary to use very short wave lengths of light (the shorter the wave length, the more accurate the knowledge of the position). But with increasingly shorter waves the momentum imparted to the electron is increasingly larger. In consequence, the velocity is increased more and more, which means that the position of the electron at a subsequent instant is unknown or indeterminate. Thus it is that when a physicist takes account of the position of an electron he thereby denies himself the possibility of making any measurement of its velocity. In other words, according to Heisenberg, an electron cannot have (in a measurable sense) both position and velocity at the same time.[12] From this fact Heisenberg deduces his "principle of uncertainty," which means that the various paths of the Bohr atom have no meaning. A. S. Eddington also points out that a particle cannot have both position and velocity simultaneously.[13] However, there are experiments by means of which the position measurement of groups of atoms in a certain state can be measured in terms of probability function for the atom.

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[11] That all the laws of nature as developed by the sciences, whether physical or otherwise, are in the nature of statistical averages was advanced in the philosophies of James Ward and Henri Bergson.

[12] See A. S. Eddington, "The Nature of the Physical World," p. 220. (The Macmillan Co., 1928.)

Thirdly, the unpredictable character of material phenomena in the microscopic world of the atom has its implications for our conception of cause and effect. The fact is, if this Heisenberg "principle of uncertainty" stands all tests, complete prediction, long supposed to be possible —at least in physical science—must be recognized as impossible. In other words, the calculation of cause and effect shall have to take the form of greater and less probability. The German physicist, Dr. Alfred Lande, suggests that trying to predict the direction and destination of the minute light corpuscles after they pass through the lens of a camera would be like trying to predict how dice would fall if they were dropped through a hole in the ceiling. The principle of causation must be abandoned and the mathematical method of determining statistical average or probability employed in its stead.

Fourthly, as both scientists (Eddington, for example) and philosophers (Dewey, for example) have pointed out, Heisenberg's principle of indeterminism has a bearing upon the theory of knowledge. In a word, if interaction in the microscopic world of the atom affects the character and status of the object, then may not the same be true when objects are acted upon by the mind in knowing? This theory of indeterminism in physics and the general theory of relativity discussed later in this chapter, appear to point philosophy in the direction of idealism.

It appears clear that the ultimate structure and nature of matter is not yet known with certainty. Again and again through the history of science it was thought that the last word had been spoken. At the present time scientists are very modest in their assertions on this problem. It must be borne in mind that a good deal of inference and speculation upon the basis of empirical and verifiable data are involved in all present-day theories of matter. It is possible, as Mr. Bertrand Russell suggests, that the two particles of energy (positive and negative electricity) into which all matter is reduced by the electron theory may some day be resolved into one. Upon further research physicists may even return to the ether theory and regard the electrical charges of the atoms as strains in the ether. In the meantime, while physicists and chemists carry on their studies, we shall have to be satisfied with a view which takes matter not as the solid, impenetrable stuff of our common sense, but, as Mr. Russell says, ''something much more like the Irishman's definition of a net, 'a number of holes tied together with a piece of string.' Only it would be necessary to imagine the string cut away until only the knots were left.''[14]

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[13] See "The Nature of the Physical World," Ch. X; P. W. Bridgman, "The New Vision of Science," in *Harpers*, March, 1929, pp. 443–457; Arthur Haas, "The World of Atoms," translated by H. S. Uhler. (D. Van Nostrand Co., 1928.)

C. Space and Time

Of all the general ideas or notions employed in thinking about the physical world none are more common to the plain man than space and time. Despite their general and scientific usage, these notions have presented to scientists and philosophers, from the ancient Greeks to our own time, some very grave problems. With some of the leading theories of matter now before us, we shall go on to consider the meanings of space and time as they are employed in describing our experiences in the physical world.

1. **Perceptual and conceptual space.**—A little reflection upon our everyday experiences reveals that we use the notion of space in two distinct senses. To our uncritical and common-sense experience, space is a great void or emptiness in which we live and in which planets, stars, and ordinary material bodies exist. A vast, infinite empti-

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[14] ''The A B C of Atoms,'' p. 1.

ness extending in all directions—right, left, up and down—this is the space of everyday common sense. This is one form of perceptual space. A deepened and widened form of this same perceptual space comes into view when we study it in the light of familiar experiences. For example, when we judge of distances on the campus with the eye or by walking, we say some objects are nearer to the library and some farther away. We say that some are to the right, others to the left, some in front of and others behind, the library. Again, when we view a landscape or a body of water at a distance of a mile or two, we perceive it as spread out and extended in certain directions. If one allows the sharp points of a pair of compasses to be placed on the back of the hand, he gets not only a sense of position of the points, but also a sense of the relationship of the points. William James held that there is an original sensation of space discernible in every sensation. "In the sensation of hearing, touch, sight and pain we are accustomed to distinguish from among the other elements the element of voluminousness."[15] Extensity, thus, for James, is an element in every sensation, just as intensity is. Perceptual space, thus, is the space of direct, sensory awareness of material objects as having the relationship of position, distance, and direction relative to each other.

Conceptual space is an abstract and idealized space; it is employed in geometry, Newtonian physics, and philosophy. Perceptual space is experienced through the senses, while conceptual space is something *thought about,* it is a construct of the mind. In conceptual space particular sensory relations of position, size, and direction are dropped off by a process of mental abstraction and only the general idea of points, lines, and planes are thought of. These are defined by the mathematician and constitute the basis of geometry. The space of Euclidian geometry, thus, is conceived as being tridimensional, infinite, homogeneous, continuous, and isotropic. Doubtless there are varying degrees or types of conceptual space. Speaking perceptually, there are many spaces, as for example, when we refer to the vast open spaces. In like manner there are types of conceptual space. For example, all devices for measuring distance, as the foot, yard, mile, knot, or light year, involve a conceptualizing of space. Other forms are the space of Euclidian geometry, four dimensional space, and multidimensional space.

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[15] "The Principles of Psychology," Vol. II, p. 134. (Henry Holt and Co., 1890.)

2. **Perceptual and conceptual time.**—Closely related to our experience of position, distance, and direction in respect to material objects, is our experience of time. It cannot be said that any one particular sense or group of senses give us the experience of time. Time is an experience of succession, of before and after, which the subject or self as a unity has when it is aware of itself as an individual in relation to other objects. When, for example, one waits at a railroad station for a train, one is keenly aware of the slow flow or duration of time. Or, when one sits through an hour of recitation, he is the subject of an experience which has duration. Time here is experienced as something which flows, sometimes slowly and sometimes rapidly. Perceptual time, then, is our personal experience of events as occurring within ourselves or in the world outside and taking on an order of succession in one direction and in an irreversible manner.

Conceptual time is to perceptual time what conceptual space is to perceptual space; it is an abstract and idealized thing—a notion of the mind. Clock time and calendar time are familiar forms of conceptual time. Conceptual time is a construction of the mind in which all that is particular, personal, or unique in perceptual time is ignored and only the bare succession of instants is considered. Conceptual time distinguishes a *past, present,* and *future,* as perceptual time does. However, the present in perceptual time has duration (a before and after) or width; while in conceptual time the present is like a mathematical point;

it has no dimensions, that is, it has a zero duration. The past in perceptual time is a reconstruction by memory in the present, and the future is a present forecast of the imagination. Conceptual time extends indefinitely into the past, and, running like a mathematical line through the present, continues indefinitely into the future.

3. **The infinity of space and time.**—Space and time ordinarily conceived are infinite. That is, space as viewed by the constructive imagination is regarded as extending in all directions without limit, and time is regarded as having no beginning and no end. Scientists and philosophers alike have been almost unanimous in their acceptance of this view. To accept the finiteness of space and time seems to raise more difficulties than to suppose that both have the character of infinity. The acceptance of the infinity of space and time implies the truth of the conceptual character of space and time. Moreover, if space and time are conceptual, then they are infinitely divisible. This means that given *any* line of conceptual area, it is divisible into halves, quarters, eighths, sixteenths, and so forth, indefinitely. In like manner *any* conceptual extent of time is divisible indefinitely and without limit. Thus there is no space so small or duration so short as not to admit of further division. These are a few of the implications of the infinity of space and time.[16]

As early as the fifth century B.C., the Greek philosopher Zeno pointed out the difficulties involved in accepting the view that space and time are infinite and infinitely divisible, and at the same time holding that physical objects are located in them. Later scientists and philosophers also were troubled by the logical contradictions apparently involved. Zeno accepted the infinite divisibility of space and time, but in consequence found it necessary to deny the reality of motion. His arguments are directed to prove that real motion is logically inconceivable and that all cases of apparent motion are illusions of the senses. His arguments are known as the paradoxes of "Achilles and the Tortoise" and of "The Flying Arrow at Rest."[17] In all, Zeno offers four arguments against the reality of motion. Doubtless they constitute a chain and should be viewed together. We shall study the paradox of "Achilles and the Tortoise" as typical, since it involves the principles of the others.

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[16] Compare Dean Swift's lines on the flea:

So naturalists observe, a flea
Has smaller fleas that on him prey;
And these have smaller still to bite 'em,
And so proceed *ad infinitum.*

Achilles, the swift-footed runner, is matched against the tortoise in a race. The tortoise, being slower, is given, let us say, ten yards the start. Now Zeno contends that Achilles can never overtake the tortoise, no matter how long or how fast the race is run. His argument runs thus: Before Achilles can overtake the tortoise, he must go half the distance which separates them. Then half the remaining distance must be covered, and half of what remains, and so on *ad infinitum.* Since any space remaining to be covered contains an infinite number of spaces, it is always further divisible and Achilles can never reach the tortoise. In fact, Achilles never moves out of his tracks. The same is true of the tortoise.

Several solutions have been proposed for Zeno's puzzles:

a. The first and simplest, though perhaps not the most satisfactory, is merely to say that Zeno confuses the order of perceptual space and the order of conceptual space. Achilles and the tortoise are perceptual objects with sensory dimensions. The running track is assumed to conform to the nature of a mathematical line. Now it is clear at once that no flesh and blood Achilles could run a race on a mathematical line, which is a matter of definition.

b. Leibnitz and DeQuincey held that Zeno's reasoning was fallacious because the infinity of space is artfully matched against a finite time. Pit the infinity of space against the infinity of time and a reciprocal exhaustion or neutralization takes place.

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[17] See Charles M. Bakewell, "Source Book in Ancient Philosophy," pp. 22–25 (Charles Scribner's Sons, 1907); see also Carr, "The General Principle of Relativity," Ch. III. (The Macmillan Co., 1920.)

c. Others hold that the last criticism of Zeno is beside the point. The real difficulty, they hold, is to come to the end of an infinite series, that is, to come to the end of something which by definition has no end. The argument begins by defining an infinite series as one which has no last term and then revokes the condition for Achilles, reinstating the last term as something which we must pass through.

d. Another way out of the difficulty involves a special interpretation of the mathematical conception of infinity. Bertrand Russell, for example, holds that in an infinite series no two members are next to one another. The series is continuous, for between any two members there is always another. On this view the series of points in a line or in space is *compact* or *dense;* there are no interstices or gaps. The same holds of time; it is also *continuous* or *dense.* When spatial and temporal infinity are defined in this way, Zeno's difficulty of understanding how Achilles could overtake the tortoise is solved. For there are just as many instants of time as there are positions in space—that is, there is perfect one-one correspondence. Zeno is right in saying that Achilles is at rest at every moment in the race, but wrong in inferring that he does not move.

e. Henri Bergson solves the paradox in still another way. Bergson denies the truth of Zeno's claim that Achilles and the tortoise are at rest for an instant at each step they take. Each step of both must be treated as indivisible, that is, the movement of both is continuous. Real movement is to be regarded as quality, not quantity. Motion, change, or duration, which for Bergson is the nature of the ultimate reality in our world—a reality akin to consciousness—is not apprehensible to the intellect. Only by an act of intuition can motion or duration be grasped. The intellect, constituted and adapted for working in solids and with the immobile, distorts time and movement.

Zeno's error, then, consists in taking what was originally an indivisible continuity (movement or duration) and decomposing it into discrete parts.[18]

f. A still further solution is offered by Einstein. He resolves the paradox by simply rejecting Zeno's supposition of the absolute character of space and time. For him there is no abstract and fixed space-time order by which movement, duration, and velocity can be absolutely determined. Space and time are dependent upon the observer and his system of reference. Thus what is an acceleration or retardation of movement in one system, say *A,* relative to another, say *B,* may not hold true when the systems *A* and *C* are compared.[19]

4. Are space and time objective?—Further light upon the nature of space and time will appear if we inquire whether there is an actual, physical existence outside us to which we may apply the names *space* and *time.* Perhaps they are creations of the subjective mind with little or no outward counterpart. The history of scientific and philosophical thought offers several views on this question.

a. Space and time as objective existences.—Common sense takes space and time as outward existences and realities. They constitute a medium in which bodies move and change from state to state. Space and time are involved in the most ordinary descriptions of objects and events. Modern physical science from Copernicus, Galileo, Newton, and Kepler to our own time has been based upon this supposition that space and time constitute an absolutely fixed, infinite framework in which the changes of material bodies take place. Einstein's relativity theory, now coming into general acceptance, is changing this view among scientists.[20]

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[18] See "Creative Evolution," pp. 308–316. (Henry Holt and Co., 1911.)

[19] See Carr, "The General Principle of Relativity," pp. 68–69; G. W. Cunningham, "Problems of Philosophy," esp. p. 199. (Henry Holt and Co.)

[20] Newton said: "Absolute, true, and mathematical time flows in virtue of its own nature uniformly and without reference to any external object." "Absolute space, by virtue of its own nature and without reference to any external object, always remains the same and is immovable." Quoted from

b. Space and time as forms of perception.—Immanuel Kant (1724–1804), a physicist, mathematician, and philosopher, advanced the view that space and time are not objective in the sense described above, but rather ways in which the human mind perceives the world. The mind is so constituted that when it perceives the objects of the outer world it perceives them as related spatially; in like manner, when the mind looks inward upon itself, it finds its experiences related temporally. Space and time, then, are in the mind, not in the things of the outer world.[21] The spatial and temporal order of our world is dependent upon human minds, similarly constituted, which impose this order on the outer realms of existence. Space and time are objective, then, only in the sense that all normal minds think alike about the objects and events of the world. Ordinarily, of course, this could be called a subjective view.

Karl Pearson, in his ''Grammar of Science,'' advocates a view similar to that of Kant, though it is worked out psychologically rather than logically as Kant's is. Professor Pearson says: ''Of time as of space we cannot assert a real existence; it is not in things, but in our mode of perceiving them.''[22]

c. Space and time as abstract concepts.—This view holds that space and time are general ideas derived by abstraction from particular concrete sensory experiences of objects and events. In his ''Essay Concerning Human Understanding,''[23] John Locke gives a clear exposition of this doctrine. He begins by criticizing and rejecting the doctrine of innate or inborn knowledge. The mind for him is a ''blank tablet'' or ''empty cabinet,'' and all ideas

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G. W. Cunningham (''Problems of Philosophy,'' p. 200), who quotes from Schlick, ''Space and Time in Contemporary Physics,'' translated by H. L. Brose, p. 2. (Oxford University Press, 1920.)

[21] See John Watson, ''Selections from Kant,'' p. 29 (The Macmillan Co.); also Cunningham, ''Problems of Philosophy,'' p. 200.

[22] P. 211; also pp. 206–218. See also Ernst Mach, ''Analysis of Sensations,'' translated by C. M. Williams, p. 346.

[23] Esp. Book II, Chs. XII–XV.

are derived from sensations, either external or internal. The ideas which come from sensations directly he calls *simple* ideas; those which result from the mind's comparing, uniting, and otherwise relating simple ideas he calls *complex* ideas. The ideas of space and time are complex ideas. Space is the general idea which we get by comparing and combining our visual, tactual, and muscular experiences with objects. The idea of pure space results when we think of an object's having deserted its place. Absolute space, then, would be infinite extension without objects. Time is the idea we get from observing the succession of our mental experiences. The idea of pure time results when we think duration without events.

d. Henri Bergson's theory of time.—Time, for Bergson, is neither clock-time, which is a standard way of measuring the succession of events, nor is it a "form of perception" as it is for Kant. Time is *duration* which is "not merely one instant replacing another; if it were, there would never be anything but the present—no prolonging of the past into the actual, no evolution, no concrete duration. Duration is the continuous progress of the past which gnaws into the future and which swells as it advances."[24] For Bergson, time is the stuff of ultimate reality. It is a qualitative thing, akin to life and consciousness, which, in its onward, ceaseless creative flow, seeks to break through matter and express itself. It is unpredictable in the mode of its manifestation and irreversible in the direction of its change and movement. We may get a glimpse of what it is like in those rare moments of intuition when we let ourselves just *live.*[25] Time here is separated from simultaneity or succession; it is entirely non-spatial. It is pure *duration,* pure continuity without succession or division—it is life and consciousness, a reality to be grasped only by an intuition of the whole self and not by the intellect.[26]

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[24] "Creative Evolution," p. 4.
[25] See "Time and Free Will," p. 100. (The Macmillan Co., 1913.)
[26] *Ibid.*, see summary, p. 221.

e. The theory of space-time.—Because of difficulties and even contradictions in the old conceptions of space and time and their relations to matter, recent mathematicians, physicists, and philosophers have been trying to work out a view which would present a unified and coherent outlook upon the physical world. These researches and studies have resulted in a theory which conceives the ultimate and basic stuff of things as space-time. Einstein and Minkowski as mathematicians, Eddington, Michelson, and Morley as physicists, and Alexander, Whitehead, and Broad as philosophers, are exponents of this view in one form or another. Mathematicians and physicists have been interested primarily in providing a consistent view of space, time, and matter as they apply to the problem presented by the material world. Only indirectly have their views philosophical import. Theoretical mathematics and physics merge into conceptions of ultimate reality. Certain philosophers, particularly Samuel Alexander and A. N. Whitehead, have attempted to construct a complete philosophy and metaphysics on the basis of space-time.

The more intricate and technical aspects of the doctrine of space-time are beyond our interests. However, effort must be made to explain some of its angles. That time is the fourth dimension of space is not at all difficult to grasp. Suppose we wished to give a complete description of the location of an event—an accident. Let us say at the corner of Broad and High Streets, Columbus, Ohio. This locates the event by two coördinates in a plane. If we add that the accident occurred on the tenth floor of the Deshler Hotel, we have given a third dimension. All that is needed now to complete the description is to say that it occurred at ten o'clock on the morning of the 15th of June, 1927. The location gives us the fourth dimension. Thus the event did not happen merely in a spatial realm of three dimensions and in another temporal realm of one dimension; it was rather one event happening in a single realm of four dimensions, namely, space-time. As Professor

Whitehead points out, the structural relations between events are both spatial and temporal. To take events as spatial only or temporal only, is to treat them abstractly.[27]

That there is one absolute framework of space and another entirely different framework of time in which events occur, is a notion not easy to escape. It is a way of thinking which has long persisted. Moreover, it works satisfactorily for most practical purposes. Yet, that space and time are welded into a single conception, and that the space framework and the time framework may be interchanged, is also a matter of common usage. As we have already shown, space and time are welded into a four-dimensional entity whenever we give a complete account of an occurrence. The interchange of the space and time frameworks takes place when, for example, we say that *A* is fifty miles from *B*, or that *A* is one hour from *B*. Again, we spatialize time on the dial of a clock and we temporalize space when we express it mathematically in terms of miles or knots. In our everyday usage, therefore, space and time are not only fused, but they are treated as mutually interdependent.[28]

Take the following illustration cited by Edwin Slosson. If a strip of motion picture film be cut into its separate scenes and piled in order till it is as high as it is broad, you will then have a cubical event. Two dimensions of the cube will be spatial and the third dimension will be essentially temporal, though in a spatial form. If one of the films from the middle of the pack be taken to represent the present, then the films below will represent the past and those above, the future.[29]

In 1908 the mathematician Minkowski advanced the view that our physical cosmos is a space-time continuum of four dimensions. Space and time as separate entities sink into insignificance and only the union of the two is held to be self-existent and real. Einstein, in 1905, in his special theory of relativity, developed and enlarged upon the view. Samuel Alexander, in his "Space, Time, and Deity," worked out a complete philosophy and metaphysics on the basis of space-time.[30] A. N. Whitehead, in a very recent work called "Process and Reality," develops a complete cosmology on the basis of spatio-temporal units which he calls "events."

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[27] See A. N. Whitehead, "The Concept of Nature," p. 168. (The Macmillan Co., 1920.)

[28] See Viscount Haldane, "The Reign of Relativity," p. 46. (Yale University Press, 1921.)

[29] See "Easy Lessons in Einstein," p. 31. See also pp. 24 ff. (Harcourt, Brace and Co., 1920.)

S. Alexander's metaphysical theory of space-time, in brief, is as follows: Space-time is the fundamental, infinite matrix or stuff out of which everything emerges by a process of evolution. Professor Alexander proposes the conception of space-time—a view in which space is regarded as the body of time and time the soul of space—in other words, point-instants, as the most plausible hypothesis of ultimate reality adequate to account for the different forms of empirical existences. Out of this all-pervasive space-time there emerges first "matter" with its primary qualities, and later the secondary qualities of matter. Later still, and by virtue of new and more intricate types of relationship in the process of change and evolution, there emerges life in all its variant forms: Then upon and within the higher forms of life—there are *grades* or *levels* within each type of being—there emerges that higher quality or form of consciousness called *mind.* Here also there are *grades* or *levels.* In the course of mental evolution the reflective consciousness appears, and here are manifest such "tertiary qualities" of being as truth, beauty, and goodness; that is, values. Lastly, and at the end of the process as the highest quality of being to emerge, God appears, the crowning achievement.

C. Lloyd Morgan's theory of emergent evolution is not greatly different from that of Alexander's, except that a

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[30] See Carr, "The General Principle of Relativity," pp. 162–163.

"divine activity" is postulated by Morgan as the origin and sustaining ground of the evolutionary process, instead of its culmination.[31] We shall not here enter upon an exposition of his view.

D. The Doctrine of Relativity

In a previous section reference was made to the fact that the common-sense view of space as tridimensional and time as one-dimensional is yielding, for scientific purposes, to the view of space-time as four-dimensional. It should be remembered that the common-sense view, as also that of Euclid and Newton, is a *theory* or *conception,* not a perceptional view. For practical purposes this Newtonian conception of space infinitely extended in all directions and the conception of time running eternally on in another dimension encounter no difficulties. They seem to work. Yet, just as a practical, common-sense astronomy had to yield in the face of a multitude of new facts, so the old conceptions of space, time, and gravitation must be restated in order to harmonize with the newly discovered empirical facts in physics and astronomy. The theoretical presuppositions of Newton and other early scientists are inadequate to explain observed phenomena in physical science. The new doctrines of space-time and gravitation, of relativity and the curvature of space, appear to be founded, not upon presupposition merely, but upon verifiable facts.

These new conceptions in mathematics, physics, and astronomy belong primarily to the physical sciences. But because they involve specific theories of matter, space, and time, every one of which has been a problem in philosophy from the early Greeks to our own time, philosophy must be interested in them. Especially is this true as philosophy goes to the sciences for its material in the form of views and theories of parts of the cosmos. We cannot hope to offer here anything like a complete statement of these new views with the evidence. Such a statement would carry us too far afield, even if we were equipped with the necessary knowledge of mathematics and physics to do so. It should be stated, however, that the doctrine of relativity as applied to knowledge in general (especially in the views of Herbert Spencer), and even to space and time (*Cf.* St. Thomas Aquinas and Kant), is not new to philosophers. Idealistic theories of knowledge, with their emphasis on the importance of the observer or organ of knowledge, as well as the object of knowledge, are prepared to accept the principle of relativity for the physical world. Does this new relativity theory in the physical sciences confirm an idealistic theory of knowledge and reality? Eddington, Einstein, and Carr suggest that it does.[32]

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[31] See "Emergent Evolution," pp. 13–14. (Henry Holt and Co., 1924.)

1. **Relativity in common-sense experience.**—It is not at all difficult to understand how a relativity of space and time is operative in our ordinary experience. Everyone is familiar with the fact that spatial distances between objects on a landscape are relative to the position of the observer. The spatial appearance of objects to one in an airplane 1,000 feet up is different from what it would be if one were three miles up. How differently our faces and our whole physical form appear when we compare our reflection from a concave mirror with that which comes from a convex mirror! Or, compare either of these reflections with the reflection from a flat mirror. Then consider time. An hour in a recitation room is probably longer than an hour at a lively party; an hour at a railway station is longer than an hour at the theater. We go to sleep at ten P.M. and awake at six A.M., and we are not aware of the passing of time. But we accept the reckoning of the sun and the clock. Are not space and time here relative to the observer? Take again the matter of mo-

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[32] See A. S. Eddington, "Space, Time, and Gravitation," p. 200 (The Macmillan Co.); Carr, "The General Principle of Relativity," pp. 161–162.

tion. May one not sit in a standing train at a railway station and, provided a train alongside starts moving, think his own train is moving? Suppose now that both trains start from the station together. Assuming that we have our eyes fixed on the neighboring train and that there is no vibration, would we be aware of motion at all? Suppose, now, we wished to fix a point in time, or in space, absolutely; that is, out of relation to any other temporal event or spatial position. Clearly, this cannot be done. There is no absolute or unrelated moment in time, and there is no absolute position in space. These, and many others, are familiar experiences, and they all suggest a kind of relativity of space, time, and motion.

2. **Relativity for physical science.**—Astronomy and physics seek generalizations or laws of the widest possible application. In the old or classical mechanics time and space were regarded as absolute and without limit. With calculations and measurements confined to the earth, these assumptions were satisfactory. However, with the widening of the extent of the physical universe and with the necessity to formulate principles which would account for the motion of the observer and the measuring systems employed, new principles and laws had to be formulated. The absoluteness of time and space had to be given up and certain laws of physical nature had to be formulated to take account of a moving system of coördinates.

Now the Einstein theory of relativity was suggested by negative results in the famous Michelson-Morley experiment, a complicated experiment performed in 1883 to determine whether the earth were moving through a stationary medium, such as the ether. An attempt was made to calculate the absolute velocity of a point on the surface of the earth in terms of the velocity of light. The experiment was carried out in terms of the basic assumptions of the traditional mechanics respecting time, space, matter, and light. The essential inadequacy of these assumptions in the classical mechanics was laid bare by the negative results of the experiment, and physicists inferred that it is impossible experimentally to determine absolute motion. Accordingly they set about to formulate new principles of mechanics. Within the last twenty-five years the theory of relativity, or the new mechanics, has come into existence as the result of calculation, experiment, and speculation. It is based on inferences from two fundamental principles, as follows: (*a*) That all motion is relative; that is, given two physical systems of coördinates in uniform translatory motion, the laws according to which change in the states of one of them takes place will hold for all changes of state in the other. (*b*) That the velocity of light is constant and independent of the motion of the source.[33] With these principles in mind let us go on to illustrate their meaning.

Take the simple example of two observers, one on the earth and the other on the sun, watching an event on the planet Mars. The temporal and spatial relations of the event will be different for the two observers because they belong to two systems of reference. Each is on a moving system of coördinates different from the other. The difference would be still greater if one observer were on the earth and another observer on a sun in another galactic system.

Professor H. Wildon Carr gives two excellent illustrations, one of which makes clear how relativity applies to space and the other how relativity applies to time. They follow:

> Let us suppose (then) that, from the window of a smoothly traveling railway carriage a stone is dropped and that an observer in the train watches it fall. For him it follows a straight course to the ground. An observer watches the same event from a position which is fixed in respect to the moving system of the train. For him it follows a curve. Which is right? Is there a real straight line which is the shortest distance between two points?

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[33] See Einstein, ''The Meaning of Relativity'' (Princeton University Press, 1923). *Cf.* also R. D. Carmichael, ''A Debate on the Theory of Relativity'' (Open Court Publishing Co., 1927).

Is there any way by which each observer can so correct his observation that he can discover the real as distinct from the apparent line? The principle of relativity declares that there is no way of deciding between the two observers, that each must use the coordinates he carries with him and that these adapt themselves to accord with every system of reference he enters, and that each observer therefore measures an event from the standpoint of his own system regarded as at rest. . . . It follows, therefore, that every straight line is what in geometry is named a *geodesic,* it is the shortest distance between two points, having regard to the space curvature of the system to which it is referred. This is the principle of relativity as it applies to space.

Now suppose that time and not space is in question, and that observers take positions equidistant from the point where an event is to take place for the purpose of recording it simultaneously. Let two observers be placed at an equal distance from a point on an electric railway at which it is arranged that a break in the circuit shall be indicated by a flash. Each observer will see the flash at the same instant. Suppose that two other observers are similarly situated, but on the moving train instead of on the permanent way. It is true in such case, as the timing is with light signals, it will not be possible to make any difference appreciable. The velocity of light is so disproportionate to any conceivable velocity of the train that the effect due to the difference could only be expressed in thousands of millionths of a second in time or of an inch in space, but, all the same, the principle can be made clear by the illustration. If the precise moment of the emission of the signal (the electric spark) is the same for two observers equidistant on the permanent way, it cannot be the same for two observers equidistant on the moving train, because during the propagation one observer will have advanced to meet the signal, the other will have receded, giving it a correspondingly longer route to travel. We have only to imagine the journey from the earth to the sun and the velocity to be that of light, and then the two signals which, for the observer on the moving system, are simultaneous, will be separated from the stationary observer by an interval of about eight minutes. The principle of relativity is, therefore, that simultaneity has no absolute meaning. No two events which happen at the same moment for observers on one system of reference can be simultaneous for observers in another system. Therefore, two events which for one observer are simultaneous, for another are before and after.[34]

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[34] Carr, "The General Principle of Relativity," pp. 173–175. (By permission of The Macmillan Co., publishers.)

From these illustrations it is clear that classical mechanics, with its conception of space and time as constant and absolute entities, is quite inadequate. There is no length, distance, or dimension of space and no form of time, whether simultaneity or succession, which is not relative and dependent upon the system of movement in which the observer is located. It follows also that space and time are not independent, but merely aspects of one physical reality.[35]

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[35] See also Viscount Haldane, "The Reign of Relativity"; Eddington, "The Theory of Relativity and Its Influence on Scientific Thought," in *Scientific Monthly*, Jan., 1923.

CHAPTER X

THE EVOLUTIONARY PROCESS IN NATURE

OF ALL the words used by the sciences to describe the orderly process of nature none is more common today than the term *evolution.* Derived from the Latin *evolvere,* which is made up of *e* or *ex* and *volvere,* evolution literally means to unroll. To use the words of J. Arthur Thomson, "Organic evolution may be defined as a continuous natural process of racial change in a definite direction, whereby distinctively new individualities arise, take root, and flourish alongside or in place of the originative stock."[1]

Evolution means gradual, orderly, and progressive change. In its broadest sense and usage, it means change with novelty, a change which may be progressive or regressive. It implies sequence and development through time. Sequence, continuity, and temporality are essential to the idea of evolution, but they are not all that is involved. Discontinuities also are evident everywhere in nature as well as temporality without change. We get closer to the meaning when we understand that something new comes out of the old in serial order with the aid of time. Invariably, too, the causes of these changes are regarded as inherent in the process. Thus "an evolutionary process is one in which individualities and novelties may be understood as successive phases of one orderly change."[2] The evolution idea thus becomes, in the words of J. A. Thomson, "the master-key that opens many doors." By it we see that "the present is child of the past and parent of the future." The old and simpler organisms of the past—even back to the beginning of organic existence—have given birth in unbroken succession to the more complex living organisms. Thomson's use of the phrase "the web of life" suggests the continuity of living things. As we shall observe below, the idea of evolution is as old as the ancient Greeks. It was not until the nineteenth century, however, that the word came into prominent use either in biology or the other sciences.

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[1] "Concerning Evolution," p. 95, 97. (Yale University Press, 1925.) See also Thomson's "Outline of Science," Vol. I, Chs. II–VIII. (G. P. Putnam's Sons.)

[2] R. B. Perry, "Present Conflict of Ideas," p. 118. (Longmans, Green and Co., 1918.)

It was the phenomenon of change involving time that early attracted the notice of reflective man. Plants and animals were observed as changing, the surface of the earth and the stars above, peoples and races, customs, manners, the organization of society, even man himself,—all were observed as constantly undergoing change. As Heraclitus (about 500 B.C.) said: "All things flow; nothing abides." "One cannot step twice into the same river. Into the same river we step and we do not step; we are and we are not."[3] From the early Greeks down to our own time, scholars have been studying this problem of change; that is, whether everything comes from a single primordial substance or stuff and returns to it, or whether there are many original substances; whether permanence is as real and ultimate as change, or whether either is only appearance; whether and in what sense time, if at all, is involved in this process of transformation; what the cause or causes of evolution are and whether there is one type or many types of causal relation. Because philosophy is interested in the problem of reality and value, it cannot afford to ignore this notion of evolution which to-day plays so large a rôle in the explanation of biological and social phenomena.

In order that we may be reasonably clear as to what is meant by evolution and how widely the concept is applied in the sciences and in philosophy, we shall consider the following points:

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[3] Charles Bakewell, "Source Book in Ancient Philosophy," p. 33. (Charles Scribner's Sons.)

I. The History of the Idea of Evolution.
II. Organic Evolution.
III. Social Evolution.
IV. Inorganic Evolution.
V. Theories of General Evolution.

The order of treatment here selected is somewhat arbitrary; yet it is one which, we hope, will contribute to ease of understanding for the reader. Opportunity is herein given to see how widely explanatory ideas or concepts arising in one field may be extended and applied in other fields.

I. The History of the Idea of Evolution

The doctrine of evolution as it is understood and accepted in science and philosophy is itself a product of growth and development. For its origin in Western civilization we must go back to the ancient Greeks. The development of the evolution idea from the sixth century B.C., in Greece, to Charles Darwin and after, is not steady and continuous. There are backward steps and blind alleys as well as forward steps. Some ideas, for example, the survival of the fittest, had to be discovered and rediscovered. Conjecture, speculation, and theorizing on meager facts and evidence were prominent until comparatively recent times. Not until the eighteenth and nineteenth centuries was there a critical inductive approach to organic and inorganic evolution. Only in the last century with the work of such men as Charles Darwin and Wallace has the evidence for the complete unity of the organic realm been regarded as conclusive.

Without attempting a detailed sketch, we may say that the growth of the evolution idea passed through four general stages:

A. The Greek Conceptions, 640 B.C.–1600 A.D.
B. Philosophical Evolutionism, 1600–1730.
C. Modern Inductive Evolutionism—before Darwin, 1730–1858.
D. Modern Inductive Evolutionism—beginning with Darwin, 1858–.

It will be clear at once that the Greek conceptions of evolution prevailed for more than two thousand years, and that the periods of development which follow are only stages within the modern period of thought. Let us go on to consider some of the contributions made in each of these periods. We are leaning heavily, in this historical sketch, upon Henry Fairfield Osborn's work "From the Greeks to Darwin" (1929).

A. THE GREEK CONCEPTIONS, 640 B.C.–1600 A.D.

As early as the sixth century B.C., men appeared in ancient Greece who discarded the mythological explanations of things in nature and instead proposed naturalistic views. From Thales to Aristotle (sixth to fourth centuries B.C.) there lived a line of scholars—astronomers, mathematicians, geographers, botanists, and zoölogists—who made first-hand studies of nature. Their reasoning was highly deductive and speculative, yet it resulted in proposing such more or less fruitful ideas as are enumerated below:

1. The idea of spontaneous generation of life from non-living material, a view which persisted until Redi (about 1668) disproved it, was accepted by Anaximenes, Diogenes, and Xenophanes.

2. The law of adaptation—the tendency for plants and animals to adjust themselves in internal structure and behavior to fit the environment—was recognized at least by Democritus (460–370 B.C.) and Aristotle (384–322 B.C.).

3. The view that terrestial creatures first lived in water and gradually became adapted to land existence was held by Anaximander (610–546 B.C.).

4. Development in the sense of increasing perfection of structure was central to the natural philosophy of Aristotle.

5. Xenophanes (576–480 B.C.) was the first to recognize fossils as the remains of animals once alive, and, in order to explain the location of fossils, proposed the view that the seas once covered the earth.

6. Empedocles (495–435 B.C.) taught a doctrine of natural selection. He was also the first to make observations in embryology—for example, to see that the embryo is formed by the union of elements from both parents and that certain characters are transmitted by heredity from parent to offspring. He was the first to propose that the planets and sun were formed out of the fortuitous play of "love" and "hate" upon four elements; namely, earth, air, fire, and water. By a gradual process in which *natural selection* was at work, first the planetary world came into being, then plants, animals, and human beings. Democritus taught a similar view, as did also the Roman poet, Lucretius (99–55 B.C.)

7. Anaxagoras (500–428 B.C.) was the first to advance the theory that adaptation in nature is due to the influence of a directing *mind* (νοῦς). This idea is more fully worked out in the teachings of Plato and Aristotle and is an anticipation of the modern doctrine of teleology. He also taught that life comes only from living forms (*biogenesis*).

8. Heraclitus (535–475 B.C.) taught that everything is in a state of motion—everything flows—nothing is at rest.

9. Aristotle was the first to conceive of a single chain of evolution connecting the lowest forms of life with the highest. Life, he believed, arose by the direct metamorphosis of inorganic matter. Plants came early in succession. Later came the plant zoöphytes, and still later came the animals proper, gifted with sensibility and even to some extent with the power of thought. Highest of all is man, the one animal capable of abstract thought.

10. Democritus (460–370 B.C.), Epicurus (341–270 B.C.),

and Lucretius (99–55 B.C.) defend a thoroughly naturalistic or anti-teleological view of the processes of nature. They hold that all change and adaptation in nature is only a special case of the infinite possibility of events taking place mechanically. Lucretius says:

> For verily not by design do the first beginnings of things station themselves each in his right place, occupied by keen-sighted intelligence,—but because after trying motions and unions of every kind, at length they fall into arrangements, such as those out of which this our sum of things has been formed,—and the earth, fostered by the heat of the sun, begins to renew this produce, and the race of living things to come up and flourish.[4]

In summing up the Greek view of the problem of change and evolution, Dr. Osborn says:

> The Greeks left the later world face to face with the problem of causation in three forms: first, whether intelligent Design is constantly operating in Nature; second, whether Nature is under the operation of natural causes due from the beginning to the laws of chance, and containing no evidence of Design, even in their origin; and third, whether Nature is under the operation of natural causes originally implanted by intelligent Design.[5]

The acute and speculative minds of the Greeks had in a large measure formulated the problem of evolution, and for many centuries it rested where they left it. During the early centuries of the Christian era social unrest was so great that little or no attention was paid to first-hand studies of nature. Gregory of Nyssa in the fourth century gave a slightly naturalistic interpretation to the order of creation, and St. Augustine (353–430), working in the light of Aristotle, gave a naturalistic interpretation of the Mosaic record of creation. He taught that men should look for natural laws in the formation of nature and not for miracles. There is not here or anywhere among the schoolmen any development of the idea of evolution beyond the views of Aristotle. Scientific work was at a standstill practically throughout the Middle Ages, except among the Arabs. But even the Arabs, though more disposed to explain changes in nature on purely naturalistic lines than medieval scholars in Europe, in natural philosophy advanced only a little beyond Aristotle. Some of the Church Fathers—for example, Gregory of Nyssa and St. Augustine—were prepared to accept Aristotle's naturalistic theory of creation. Many of the schoolmen also took the same position. However, when Aristotle's writings returned to the West from the Arabs, who had been their custodians during the Dark Ages, they came back with Arabian commentaries and scientific additions. The leaders of the Church refused to accept them without censorship. They feared the religious heresy which might lurk in these Mohammedan sources, and they were not ready to accept any additions to Aristotle. In consequence, and in course of time, there sprang up the theory of special creation, which has occasioned much controversy in the modern period of thought. Francisco Suarez (1548–1617), an influential churchman, formulated the special creation theory out of two sources chiefly: the Genesis account in the Bible and the natural philosophy of Plato and Aristotle.

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[4] H. F. Osborn, "From the Greeks to Darwin," pp. 93–94. (Charles Scribner's Sons.)

[5] *Ibid.*, p. 102.

B. PHILOSOPHICAL EVOLUTIONISM (1600–1730)

During this period botany and zoölogy are freed from the Greek tradition. The modern theory of biological evolution begins as a part of a naturalistic and evolutionary explanation of the universe. There are suggestions of an inductive approach to biological evolution as based upon the transformation and filiation of species.

From 1600 to 1730, philosophers with various interests were the custodians of the evolution idea. Dr. Osborn classifies the scientific scholars of these centuries into three groups: First, naturalists who through the seventeenth century gave themselves mostly to compiling data already secured and among whom a few speculative theories were in vogue. Second, the speculative evolutionists who repeated the Greek views and added to them "thoroughly unsound ideas upon the origin of species." Among these were: Maupertius, a mathematician and astronomer; Diderot, the political writer; Bonnet, the eminent naturalist; DeMoillet, a French consul at Leghorn; Robinet, a popular scientist of his time; and Oken, a professor of natural history at the University of Zurich. Third, the great natural philosophers beginning with da Vinci, Bacon, Descartes, Leibnitz, and Hume, and ending with Kant, Lessing, Herder, and Schelling.

It was these natural philosophers who introduced the modern methods of studying evolution and laid the foundations of the modern theory of evolution. It was they who suggested the transformation and filiation of species. Francis Bacon (1561–1626) not only stressed the value of observation, experiment, and induction in science, but was probably the first to raise the question of mutability of species as the possible result of the accumulation of variations. René Descartes (1596–1650), a mathematician and anatomist, takes a step toward explaining everything by natural law when he advances the view that the physical universe, including the animal world, is a mechanism. Leibnitz (1646–1716) proposed two ideas which exerted a wide, though in some ways a misleading, influence. The first was his doctrine of continuity, upon which he says: "All natural order of beings present but a single chain, in which the different classes of animals, like so many rings, are so closely united that it is not possible either by observation or imagination to determine where one ends or begins."[6] Leibnitz's theory of continuity, extending even so far as to regard man as having ascended gradually from the ape, comes very close to the modern conception of evolution. His second idea is the doctrine of the perfectibility of the monads, the ultimate units out of which everything is composed. This idea, doubtless, was suggested by Bruno and came originally from Aristotle.

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[6] Quoted from Osborn, *op. cit.*, pp. 142–143.

Spinoza, Pascal, and Hume accepted an evolutionary point of view in respect to plants and animals. Spinoza and Hume believed that the world might have come into existence by the activity of principles inherent in it and that the "survival of the fittest" was probably a law of selection, adaptation, environment, and inheritance. Kant (1724–1804) accepted the biological evolution of Buffon and actually proposed that from "raw matter and its forces" it is conceivable that the "whole apparatus of nature seems to have been derived according to mechanical laws (such as those which resulted in the production of crystals); yet this apparatus, as seen in organic beings, is so incomprehensible to us, that we feel ourselves compelled to conceive for it a different principle."[7] He granted that even organisms may have sprung from the earliest changes in nature; yet he hesitated to explain their origin entirely in terms of mechanical causation. Lessing, Herder, and Schelling also accepted a view of the gradations of organisms from the lowest to the highest.

C. Modern Inductive Evolutionism—before Darwin
(1730–1858)

From 1730 to 1850 there is a rapid advance in such sciences as zoölogy, botany, and paleontology. There is also an increased emphasis upon the inductive study of plant and animal organisms, although theorizing and speculation upon the filiation and transformation of species continues.

One of the first contributions to the development of the evolution idea in this period was made by the Swedish botanist and zoölogist, Linnaeus (1707–1778). He was a Christian and held to the separate creation of plant and animal species. Yet, in his "*Systema Naturæ,*" he was concerned with the way species are related to each other, and in this work he admitted that in certain cases new forms might have come into being through crosses between the original species. But the change thus brought about was held to be a degenerate one, tending to obscure the original type as it came from the hand of the creator. In his attempted classification of the species he discovered that the different plant and animal forms could not be definitely separated from one another. The suggestion here offered led botanists and zoölogists to inquire more definitely into the nature of species itself.

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[7] Quoted from Osborn, "From the Greeks to Darwin," p. 152.

Contemporary with Linnaeus lived the great French naturalist, Buffon (1707–1788). Like Linnaeus he started with a belief in the fixity of species. With the ripening knowledge which came to him through his studies of comparative anatomy, he was led to question the perfection with which the animal is built. In his famous dissertation upon the pig, he points out that the animal cannot be regarded as formed upon an originally perfect plan, but that it evidently has parts which, though well formed, are of little or no service to it; in fact, it may be regarded as a compound of other animals. From this it was not a great step to a belief in the mutability of species, and to the belief that the members of a group of species showing family resemblances may have been derived from a common ancestor, some by becoming more perfect, others by degenerating. So might the horse and the ass be shown to be related, and the man and the ape. Yet after forcibly advancing the claims of a common descent for many living things, Buffon lapses into an apparent adherence to the orthodox Christian view, and between his scientific and religious views he seems to oscillate.

The seed sown by Buffon began to bear fruit in the work of Erasmus Darwin (1731–1802) in England and in the teachings of Lamarck (1744–1829) in France. Each of these men put forward a doctrine of evolution in which they accepted the mutability of species and each adopted the hypothesis that a change in environment accounted for the transformation of species. Buffon had proposed the same hypothesis. Erasmus Darwin and Lamarck held that a change in the environment led to a change in the habits of the animal and thus to increased use of certain organs and disuse of others, eventually resulting in the change of the animal's form. These ''acquired characteristics,'' as they are generally called, were supposed to be transmitted to succeeding generations through inheritance.[8]

The doctrines of Erasmus Darwin and Lamarck excited much attention, but failed to get general acceptance in England and France. In the English universities scientific studies were at low ebb and the influence and the authority of the theologians were dominant. In France the great weight of the learning of Cuvier (1769–1832), the founder of the science of comparative anatomy, was cast in the scale against Lamarck.

But, while Cuvier was winning his victory over the Lamarckians in the Academy of Science in Paris, Sir Charles Lyell's ''Principles of Geology'' advanced the uniformitarian doctrine, namely, that the past must be explained by the present unless good cause can be shown to the contrary. Lyell's doctrine provided another strong argument for the evolutionists. Cuvier had sought to explain the remains of plant and animal formation in geological strata by supposing a series of world catastrophes which blotted out plants and animals, these in turn being followed by a series of separate creations which repeopled the earth. By abolishing the theory of catastrophes, the geologist brought the naturalist face to face with the necessity of explaining the connection between the fossil forms of life and those still living.

In 1844 Robert Chambers, a Scottish author and publisher, brought together in his "Vestiges of Creation" the existing arguments for evolution. The work was published anonymously because the author feared popular disapproval. However, within nine years the work ran through ten editions, showing that the times were ripe for the results of Darwin's studies. Chambers' arguments, as summarized below, show that the evidences for organic evolution were, for the most part, all known before the publication of Charles Darwin's monumental "Origin of Species" in 1859. The evidences, discussed later, are briefly stated as follows:

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[8] August Weissmann, the famous embryologist of the last century (1834–1914), through his experiments with germ plasm, was led to deny the doctrine of the transmission of acquired characteristics. Weissmann's view is generally accepted by biologists to-day. Spencer and Charles Darwin seem to have accepted Lamarck's view.

1. The argument from the general presumption of science against supernatural explanations of phenomena.
2. The argument from uniformitarianism in geology.
3. The argument from homologies in vertebrates.
4. The argument from variability of existing species.
5. The argument from sequence of types in paleontology.
6. The argument from persistence of types in geology.
7. The argument from embryology; namely, the embryo gives us a telescopic or epitomized recapitulation of the whole evolutionary process. For example, the embryos of all vertebrates recapitulate in their ontogenetic history all the stages of the phylogenetic series.
8. The argument from the existence of vestigial organs, as for example, the vermiform appendix in the human organism.

D. Modern Inductive Evolution—Beginning with Darwin (1858–)

During this period the theory of evolution as applied to the whole realm of living things was established as a law of nature both on inductive and deductive grounds. Charles Darwin and Alfred Russell Wallace, working along similar lines, arrived at identical conclusions concerning the operation of natural selection as an important factor in the formation of species. Darwin had arrived at his theory as early as 1842, but refrained from publishing it until 1858. In that year Wallace arrived at the same conception.

Through the happy coincidence of a close friendship between the two scholars no bitter rivalry arose, and each published a résumé of his view in the *Journal of the Linnæan Society,* June 30, 1858.

With this brief statement concerning the last period in the history of the evolution idea we close our historical statement, reserving the more detailed account of the meaning and laws of evolution as understood to-day for the next section.

II. Organic Evolution

To understand the doctrine of biological evolution as accepted in scientific circles since the middle of the last century, one can do no better than to begin with the teaching of Charles Darwin as set forth in his "Origin of Species." It was the publication of this epoch-making work that, for most biologists at least, solved the problem of evolution. "It was the actual flash," to use Huxley's words, "which illuminated the biological realm and revealed the method of mechanism of evolution." Up to this time, excepting Lamarck's work, evolution had been a speculation or rough generalization. Through Darwin's painstaking observations and experiments the important factors and causes of biological evolution were believed to have been laid bare and evolution became an accredited scientific theory. Few achievements in the history of science are to be compared with Darwin's, unless it be those of Copernicus, Galileo, Kepler, Newton, and Einstein. Yet, in a sense, Darwin's method is quite as illuminating and instructive to science as his enunciation of the doctrine of natural selection.

Darwin's theory of evolution, briefly, may be stated as follows: Nature is prodigal of life. More individuals are brought into existence than there is room or subsistence to maintain. For example, a single codfish may produce 200,000,000 eggs; a dandelion plant, should all the seeds mature and take root, could in four generations cover an area two hundred and forty-five times greater than the area of the United States; one bacterial germ might produce more than a million similar germs in a day; and, according to Linnaeus, three flies could make away with the carcass of a horse as quickly as a lion could. Because of the rapid increase in number among living things—they multiply in geometrical ratio—a severe and deadly struggle for existence takes place, and only the fittest survive. In any generation of offspring, even from the same parents, there are slight *individual variations* due to unknown causes connected with reproduction, besides the common hereditary qualities or characters. In the contest for food and maintenance some of these individual variations give certain members of a family an advantage in survival. The members without these favorable variations go down in the struggle. Those whose variations are favorable thrive and propagate their kind, often transmitting their favorable variation to their offspring. Thus, while like begets like, there are always differences. These differences in the form of favorable variations are the basis on which nature makes her selection, some for survival and others for death. *Natural selection,* thus, is another factor in evolution. With the passing of time and the appearance of one generation after another, each sifted by natural selection for favorable variations, there occur modifications of structure and accumulation of favorable traits until suddenly a new species is formed. Darwin's view, then, in brief, is that new species come into existence by natural selection in a mechanical process consisting of a concatenation of circumstances rather than by design.

A. The Work of Lamarck and Darwin

In connection with the development of the evolution idea, Lamarck, the great French naturalist, is probably the greatest figure between Aristotle and Charles Darwin. His theory of the transformation of species was based upon his studies of animals, and was first published in 1808. There were two main factors in his theory: (1) The environment acting upon the internal structure of the organism, particularly the nervous system, effects changes which (2) are transmitted by the organism to the offspring. Lamarck observed that conditions in the environment occasioned use and disuse of parts of the organism, and, furthermore, that there were innate desires or appetencies for certain ends. Thus modifications of the organism take place by reason of two conditioning circumstances. The *acquired characteristics,* he believed, are transmitted by heredity to the next generation. In respect to plants, Lamarck accepted the theory of Buffon; namely, that new species come into existence by the direct action of the environment. Thus, the giraffe, for example, has its long neck because its ancestors, through many generations, stretched their necks reaching to the tree tops for tender leaves. The hind legs of the cat took on their particular form and structure because for generations cats have used their hind legs for jumping after prey. Use and disuse, then, under the influence of a modifying environment, together with certain organic needs resulting in effort and struggle, bring about structural modifications of the part or the whole of the organism which are transmitted to the next generation through heredity. Changes in structure bring about changes in function (the reverse may also be true), and when these become sufficiently great we have what is called a new species.

When Darwin came to the problem of the origin of species, two theories presented themselves for choice: special creation and Lamarck's transmutation view. Darwin rejected the theory that each separate thing is the result of design. While he accepted in a limited way Lamarck's theory of use and disuse and the transmission of acquired characteristics, his own theory makes no great use of these conceptions. Granted four basic assumptions, namely, (1) *variation,* (2) *heredity,* (3) *the struggle for existence,* and (4) *natural selection,* with the *survival of the fittest,* these being evident to any competent observer, the appearance of new species may be accounted for on the basis of a chance combination of multiple factors. Darwin does not presume to explain just *how* or *why* there is the life urge, the desire, the aspiration or will to live. Variations are spoken of as the result of chance, which does not mean either the blind fortuition of Empedocles or the internal perfecting principle of Aristotle. "I am inclined to look at everything as resulting from designed laws, with the details, whether good or bad, left to the working out of what we may call chance. Not that this notion *at all* satisfies me."[9] Here is the mechanistic aspect of Darwin's whole theory. Variations are preserved, Darwin believed, because they are useful. But to be preserved, on this theory, they must be useful when they first appear. That this is possible has been questioned by many competent students of biology.

The following cases suggest a few of the difficulties encountered in Darwin's theory of chance or natural selection:

1. John Burroughs, in "A Critical Glance into Darwin," *Atlantic Monthly,* August, 1920 (p. 239), cites the difficulties in understanding how so complicated a structure as an eye could be developed by chance and natural selection.
2. The function of the adrenal glands, as described by Walter B. Cannon, "Bodily Changes in Pain, Hunger, Fear, and Rage," Chs. IV–X, involves a complicated series of interlocking adaptations which can scarcely be conceived as having developed out of chance variation.
3. Henri Bergson, in "Creative Evolution" (pp. 62–63), cites the case of the appearance of an eye in the Pecten (a species of mollusk) similar in structure to the eye of the vertebrate. "All are agreed," he says, "that mollusks

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[9] Darwin, in a letter to Asa Gray, May 22, 1860. Quoted from Osborn, *op. cit.,* p. 339.

separated from their common parent-stem long before the appearance of an eye so complicated as that of the Pecten. Whence, then, the structural analogy?'' Darwin's explanation is in terms of the accumulation of *insensible, chance* variations.[10] Bergson points out that whether variations are insensible, that is, infinitesimal, or whether they are fewer in number and greater in size, neither explains how such similar organs should appear by chance combinations on diverse lines of evolution.

In the matter of *heredity* as employed by Darwin much is left to be explained. Just *why* and *how* like begets like with variation we are not told. When it is remembered that the plant or the animal organism is made of organisms within an organism, each complex and intricately constituted, we wonder just how it is that the seed or germ can carry within it the marvelous potency to reproduce after its kind. Weissmann's theory of the continuity of the germ plasm, now generally accepted by biologists, seems to throw some light on the mystery of heredity.[11] Already in 1875, Galton pointed out that, in an important sense, the child is as old as the parent; for when the parent's body is developing from the fertilized ovum, a residue of unaltered germinal material is kept apart to form the reproductive cells, one of which may become the starting point of a child. This idea has been independently expressed and more fully developed by Weissmann, who states it thus: ''In development a part of the germ plasm (i.e., the essential germinal material) contained in the parent egg-cell is not used up in the construction of the body of the offspring, but is reserved unchanged for the formation of the germ-cells of the following generation.'' Thus, as Geddes and Thomson affirm, the parent is rather the trustee of the germ plasm than the producer of the child. In a real and new sense the child is ''a chip off the old block.''[12]

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[10] See Darwin, ''Origin of Species,'' Ch. II. (D. Appleton and Co., 1925.)

[11] There is renewed interest at present in Lamarck's doctrine of the transmission of acquired characteristics. Professor E. W. McBride is perhaps the most distinguished living proponent of a revised Lamarckian view. See his ''Heredity,'' published in 1924 (Henry Holt and Co.). M. F. Guyer, of the University of Wisconsin, and William McDougall, of Duke University, have discovered experimental evidence for the transmission of acquired characteristics in rats. The former discovered a tendency towards the inheritance of lens injury, and the latter observed that the effects of training tended to be transmitted to the offspring.

This theory of the continuity or immortality of the germ plasm implies that the germinal material is increased and continued into the next. By a process of cell division in each generation the amount of germinal material is increased and made available for the production of future generations. But right here in the mysterious and little understood process of cell division, we come to the heart of the whole problem of heredity. When we say that from *similar* germ plasm *similar* organisms arise, or are produced, we assume what is to be explained.

Natural selection, with its product, the survival of the fittest, is another of the basic Darwinian concepts. That it appears to work in nature, no one is likely to question. Descriptively, it seems to tell us exactly what is going on. But what does it mean in the light of the whole evolutionary process of nature? Does it mean that nature selects with conscious and intelligent intent the best for survival? Certainly Darwin did not mean that natural selection was to be taken as an *agent* operating with conscious design. All that Darwin meant was that nature so behaves in the interaction of its multiple forces as to sift out the weak and unfit and preserve the strong and fit. Those organisms which, either in their existing or adapted forms, cannot thrive in the environment drop into extinction. Those which are adjusted to the environment, or can put on new equipment so that they are adjusted, survive and propagate their kind. As John Burroughs says, natural selection is only ''a name for a process of elimination which is constantly going on in nature about us. It is in no sense creative, it originates nothing, but clinches and toughens existing forms. . . . What I mean to say is that there must be the primordial tendency to develop which natural selection is powerless to beget, and which it can only speed up or augment. It cannot give the wing to the seed, or the spring, or the hook; or the feather to the bird; or the scale to the fish; but it can perfect all these things. The fittest of its kind does stand the best chance to survive.''[13]

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[12] Geddes and Thomson, ''Evolution,'' pp. 114–115 (Henry Holt and Co., 1911). *Cf.* August Weissmann, ''The Germ Plasm'' (Charles Scribner's Sons, 1893).

B. The Theory of Mutations

Professor Hugo de Vries, the Dutch botanist, is the leading exponent of a theory of evolution or origin of species known as the mutation theory. In a treatise, ''The Mutation Theory,'' published in 1900, he set forth an account of experiments and observations on the evening primrose, in which he rejected the Darwinian doctrine of slight individual variations as the occasion of new species. He held that *sudden leaps* in type appear, these breeding true in the progeny. These sudden changes of type, which are as unexpected and inexplicable as Darwin's chance variations, are sometimes called mutations or sports. The distinction between variation and mutation was not made in Darwin's time. It is entirely probable that he meant to include mutation under variation.[14] However, at the present time it is generally regarded that the distinctive marks of a species may arise either (1) by the accumulation of variations, that is, variations due to the action of the environment but not inheritable; or (2) suddenly by mutation. Neither of these explanations, of course, evades the four presuppositions of Darwin, nor do they explain the cause or causes of evolution. Like Darwin's explanation, they are descriptive of the method of evolution.[15]

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[13] ''A Critical Glance into Darwin,'' *The Atlantic Monthly,* August, 1920, pp. 246–247. See also Thomson, ''Outline of Science,'' Vol. II, Ch. XI.

[14] *Cf.* Bergson, who says that Darwin knew of sudden variations or sports but that he regarded them as monstrosities incapable of perpetuating themselves. *Op. cit.,* pp. 62–63.

C. Evidences for Organic Evolution

The general theory of evolution rests upon the following types of evidences:

1. **Homologies.**—The structural resemblances between members in the organisms of different species; for example, the wing of a bat and the arm of man; the foot of a dog, and the foot of man; the fin of a whale, and the arm of man. As Darwin remarked: "How inexplicable is the similar pattern of the hand of man, the foot of a dog, the wing of a bat, the flipper of a seal, on the doctrine of independent acts of creation."[16] Structural novelties which appear in the animal series are most plausibly explained by comparative anatomy as "old organs in a new disguise." For example, the poison gland of the snake is a modification of the salivary gland; the milk glands of mammals are specializations of sebaceous glands.

2. **Similarity of cells among vertebrates.**—As we descend from man to the lower vertebrates we find a decreasing re-

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[15] 1. Professor de Vries says: "The current belief assumes that new species are slowly changed into new types. In contradiction to this conception the theory of mutation assumes that new species and varieties are produced from existing forms by sudden leaps. The present type still remains unchanged throughout the process, and may repeatedly give birth to new forms." (Quoted from Thomson, "Outline of Science," Vol. II, p. 372.)

2. Thomas Hunt Morgan, in "A Critique of the Theory of Evolution," pp. 27ff., states that there are four rather distinctive theories or lines of speculation concerning evolution in modern times. In addition to the views of Lamarck and Darwin herein discussed, he mentions two others: (*a*) That of Étienne Geoffroy Saint-Hilaire (1772–1844), a disciple of Buffon, who taught that as the environment changed, plants and animals changed. If the change in the plant or animal was unfavorable, it would perish; if the change in response to the environment was favorable, it would thrive and propagate its kind. There is here the germ of Darwin's doctrine of natural selection. He does not mention struggle. (*b*) Nägeli (1817–1891), a German botanist, and Bateson, a contemporary English biologist, have proposed the view that the process of evolution is like the growth of a tree, the tree being thought of as unfolding its potential and innate powers, under the *pruning* and shaping influence of natural selection. This view resembles Leibnitz's preformation theory.

[16] Quoted from Geddes and Thomson, "Evolution," p. 44.

semblance of cell structure. When we ascend from the lower to the higher vertebrates, we find an increasing resemblance of cell structure.

3. **Classification.**—Any attempt to classify plants or animals results in setting up a genealogical tree in which continuity is everywhere manifest. There are some gaps or discontinuities, it is true; but the continuity is more apparent than the discontinuity. Moreover, some species are so closely linked as to make separation on any basis somewhat arbitrary.

4. **Vestigial organs.**—The presence of vestigial organs in both plants and animals suggests evolution. The most natural supposition to make is that such rudimentary organs as the vermiform appendix in man, the rudimentary muscles for moving the ear in man, the deeply imbedded and rudimentary hind-legs of the whale, the teeth which never cut the gums in the baleen whale, the diminutive hind-legs in the boa constrictor are evidences of evolution.

5. **Embryology.**—This science shows that reptiles, birds, and mammals pass through prenatal stages in which their respective embryos undeniably resemble each other. Every child has found delight in watching the tadpole change into the frog.

6. **Recapitulation.**—Ontogeny repeats phylogeny. By *ontogeny* is meant the life history of a single organism, and by *phylogeny* is meant the entire race history of an animal or plant. Since, then, the individual life history of an animal organism, particularly the vertebrate, tends to repeat all the stages of its phylogenetic or race history, it is believed that all vertebrates have a common origin. That is, all vertebrates have evolved from a common stock.

7. **Experimental evidence.**—The skilled hand of a Luther Burbank, guided by a keen mind, produced many new species of flowers, fruits, grains, and vegetables. Breeders of pigeons, chickens, dogs, horses, and cattle have produced new species by selectively mating existing species. Charles Darwin found the work of horticulturists and

stockmen suggestive in working out his own theory of the origin of species. Moreover, careful observers have noted that differences in organisms effected by changes in the environment closely resemble the differences which separate one species from another.

8. **Geographical distribution.**—The distribution of plants and animals on the earth's surface is such as to suggest that there is a kinship relation between the existing and extinct plants and animals in the same general area. For example, numerous ground sloths may be unearthed in South America, which is now the home of numerous members of the same sloth and anteater family. Again, continental islands have the same plants and animals as the mainland, whereas oceanic islands, usually of volcanic origin, have plants and animals of indigenous origin. For example, such agencies as water, wind, and birds may be at work.

9. **Paleontology.**—The evidence from the fossil remains of plants and animals in rock strata of the earth is to many the most convincing of all. By this means living animals, for example, the horse and elephant, may be traced to an ancestry remote in time and very different in form. Thus it is held that the horse as we know it to-day descended from a five-toed creature not larger than a dog, and the elephant from a short-snouted animal about the size of a donkey. The series of fossil remains of these two families of animals cannot be interpreted in any other way than that they portray a continuous history.

D. Difficulties in the Doctrine of Organic Evolution

Never has there been a greater degree of certainty concerning the evolution formula as descriptive of the process of nature than at the present time. For example, Sir Arthur Keith in his presidential address before the British Association for the Advancement of Science, Aug. 31, 1927, speaking of Darwin's "Descent of Man," said: "Fifty-six years have come and gone since that history was written; an enormous body of new evidence has poured in upon us. We are now able to fill in many pages which Darwin had perforce to leave blank, and we have found it necessary to alter details in his narrative, but the fundamentals of Darwin's outline of man's history remain unshaken. Nay, so strong has his position become that I am convinced that it never can be shaken.''[17] In 1929 the executive committee of the Council of the American Association for the Advancement of Science declared, in a resolution, that ''so far as the scientific evidences of the evolution of plants and animals and man are concerned, there is no ground whatever for the assertion that these evidences constitute a 'mere guess.' No scientific generalization is more strongly supported by thoroughly tested evidences than is that of organic evolution.''[18]

Yet, despite such noteworthy discoveries as the Mendelian law of inheritance and the occurrence of mutations, many of the pedigrees of the post-Darwinian days, which were accepted as accurate and complete, have been found to be faulty. For example, many of Haeckel's genealogical trees have had to be discarded. J. A. Thomson suggests: ''Who can say anything, except in a general way, regarding the ancestry of birds or even vertebrates? We are only nibbling at the provisional description of how most of the great lifts in evolution have been effected. The fact of evolution stands more firmly than ever; the uncertainty in regard to the factors is immense.''[19] Thomson goes on to say that although Darwin published his ''Origin of Species'' in 1859, no one to-day has any clear knowledge of the origin of a single species. While it is generally believed that variation, heredity, the struggle for existence, natural selection, and the survival of the fittest are factors or conditions at work in the origin of species, there may still be unknown factors.

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[17] New York *Times*, Sunday, September 4, 1927.

[18] *Bulletin of the American Association of University Professors*, October, 1929, pp. 426–427.

[19] ''Concerning Evolution,'' p. 99. (Yale University Press, 1925.)

E. THE CAUSES OF ORGANIC EVOLUTION

There is a division of opinion to-day as to how adequately organic evolution is explained. Some leading biologists—for example, William Bateson,[20] Patrick Geddes, J. A. Thomson,[21] Vernon L. Kellogg,[22] Henry Fairfield Osborn,[23] Henri Bergson,[24] and William Patten [25]—hold that we do not know what the *cause* or *causes* of evolution are. Others equally competent in the field of biology—for example, O. C. Nutting,[26] Jacques Loeb,[27] and Sir Arthur Keith [28] (this group is in the minority)—believe in the adequacy of natural selection along with or combined with other factors. Some specialists in biology are convinced that while the evidence or proof is not complete, Darwin and Weissmann were on the right track and that in the near future what yet remains hidden will be made clear. Professors Loeb and Keith doubtless would put themselves in this class. Perhaps it is safe to say that the preponderance of opinion is on the side of those who believe that the real causes of evolution are still unknown.

III. Social Evolution

That there is change going on in the realm of events, processes, and institutions, effected in part by human beings, is evident to every observer. The changes here are in many respects similar to the changes going on in the organic world. Man as an animal organism is subject to all the forces and influences which are at work in organic evolution. But within and upon the human plane of existence there appear interests, institutions, and values which are created, fostered, and controlled largely by human beings working separately and conjointly. There is such a thing as the origin, development, and, sometimes, decay of language, customs, religious beliefs and practices, civil and industrial organizations, educational institutions, and theories and practices. The term *social evolution* may well describe that continuous, orderly, natural process of change in human affairs whereby, through the conscious or unconscious activities of man, new beliefs, practices, and institutions arise to supplement or displace the old. Archeology and anthropology study the cultural changes among the races and nations of antiquity, while the social sciences study the cultural changes going on to-day. The change and development of man's social and cultural environment is but a phase in the web of organic and cosmic evolution.

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[20] *Science,* Jan. 20, 1922.

[21] Geddes and Thomson, ''Evolution,'' p. 248.

[22] ''Darwinism To-day,'' p. 5; ''Where Darwinism Stands To-day,'' in the *New Republic,* April 11, 1923.

[23] ''The Origin and Evolution of Life,'' pp. ix–xv. (Charles Scribner's Sons, 1917.)

[24] ''Creative Evolution,'' p. 102. (Henry Holt and Co.)

[25] ''The Grand Strategy of Evolution,'' pp. 32–33; p. 129; Ch. IV. (Richard G. Badger, 1920.)

[26] ''Is Darwin Shorn?'' in the *Scientific Monthly,* Feb., 1921.

[27] ''The Mechanistic Conception of Life,'' in *Popular Science Monthly,* Vol. LXXX, pp. 5 ff.

[28] Address before the British Association for the Advancement of Science as reported in the New York *Times,* Sunday, Sept. 4, 1927.

A. Cases of Social Evolution

Let us now turn to consider some typical cases of social evolution. These types are as numerous and as varied as are the aspects of the social environment.

1. **Customs, beliefs, and practices change.**—In order to appreciate the steady upward trend in beliefs and practices, whether in morals, religion, or government, it is necessary to study human society historically and comparatively. At the dawn of the history of such peoples as the Hebrews, Greeks, and Romans—to mention no others—we find a belief in animism, totemism, taboo, magic, and myth. Out of beliefs and practices that are founded on ignorance, superstition, and fear, there have developed the morals, religion, and science of our modern Western world. But how slow and tedious through about 2500 years

was this process of change! At the beginning of this history there was no differentiation of morals, religion, government, science, and philosophy. The experience and knowledge of men in those times was unclassified, unspecialized, and undifferentiated. Gradually the separation of human interests took place under the influence of a changing environment and a changing mode of physical existence. The crude, semihuman deities with human passions and weaknesses give way to more refined conceptions of deity. The tribal deities, jealous and acquisitive, yield to national and more humane deities, and these in turn to a single cosmic deity with superlative moral qualities. Morals, too, pass from custom-morality of the tribe in which *lex talionis* holds sway, to a morality of love and mercy in which the individual is regarded as valuable. Government passes from the patriarchal stage where the elders rule, through monarchy, oligarchy, and aristocracy, to more democratic forms, such as constitutional monarchies and republics. Man's growing knowledge of nature and of himself enables him to devise ways and means of more effectively controlling his own personal life and the forces of the physical world. In their development man's beliefs and practices move from the simple, crude conceptions of the group mind to beliefs and practices of individuals who have been more or less emancipated from group behavior.

That there has been social evolution in the realm of beliefs and practices is evident when it is remembered that human sacrifices, cannibalism, slavery, imprisonment for debt, gladitorial combats, exposure to death of the aged and weak, witchcraft, demon worship, and so forth, have been left behind and in their stead we have more intelligent and humane beliefs and practices involving a growing zeal for beautiful churches with orderly services, well-equipped and well-managed public schools and colleges, hospitals, organized charities, and systems of law and order.

2. **Evolution of institutions.**—The natural product of the growth and refinement of beliefs and practices is the evolution of social institutions. ''An institution,'' says Emerson, ''is the lengthened shadow of one man. . . . All history resolves itself very easily into the biography of a few stout and earnest persons.''[29] Whether history can be written as biography may reasonably be doubted; certainly there are other factors than genius in the development of social institutions. Institutions are the embodiment, under the guidance of social purpose and reflective thought, of human beliefs and practices. Such institutions as the family, the state, the school, the church, civic and industrial organizations, government, law and the courts, rights of person and property, international arrangements such as alliances and leagues, are creations of the individual and group mind for the promotion of human welfare. New desires, new knowledge and insight, new aims and ideals are very quickly registered in a modification of an old institution or the invention of a new one. Thus the form and state of human institutions rather accurately exhibits and measures the degree of human attainment in desire and belief.

3. **Changes in language.**—There are few places in our cultural life where the marks of social evolution are more evident than in language. Language may with some propriety be called an institution, for it is an expression of human intelligence as well as an instrument of thought. Our English language, with its Anglo-Saxon, Latin and Greek roots, with its modifications and additions from French, German, and Spanish, is slowly undergoing change and development through diverse usage. Scholars in the special sciences and in the fine arts occasionally find it necessary to coin new words to express new meanings. Other words have their origin in the slang of the street. New meanings are given to old words through technical definition, through slang and figurative usage. So rapid

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[29] Essay, ''Self-Reliance.''

is the change in the meanings of words that old documents, treatises, and manuscripts require to be newly translated from age to age in order that meanings, phrasings, idioms, and punctuation be brought up to date. We talk of Old English, Middle English, and Modern English. And why is this? A language changes and evolves; something new in thought and meaning appears.

Language is not only an instrument of thought; it is also a medium through which the bodies of knowledge called the sciences get expression. Here again there is evolution. There is a step-by-step development of the whole critical body of knowledge, though each science in itself, in its historical unfoldment, exhibits all the traits of evolution. From simple beginnings, mathematics, astronomy, physics, chemistry, biology, psychology, and sociology, each takes a course of gradual growth, enrichment, and complexity. Thus, here also, there is change with novelty, steady growth interrupted by sudden leaps and bounds, yet on the whole the present state of any science is entirely continuous with its past. Besides this historical continuity of any particular science, there is also the interdependence among the sciences forming a weblike structure of knowledge, akin to the interlocked relations of plants and animals.

B. Causes of Social Evolution

The causes which bring about social evolution are manifold. Social changes are affected very much by the physical conditions under which man lives. Reflection upon experiences is the primary means whereby the existing beliefs and institutions are modified. But reflection will be controlled largely by the nature of the physical and social environment. Among the factors which cause social evolution, we may mention:

1. **The physical environment.**—Such conditions as soil, climate, rainfall, and natural resources constitute both the

stimuli and the means for social evolution. Conditions in respect to these factors may be favorable or unfavorable.

2. **Man's organic needs.**—The springs of social evolution lie, in part, in man's organic needs. The need for food and shelter, the craving for action and self-expression in various ways, all of which increase in quality as well as quantity as civilization develops, occasion change and development in society. In response to these basic needs there takes place a division of labor and specialization of vocation. These in turn make possible a refinement and improvement of all the instruments of culture—tools, machinery, instruments, weapons, even beliefs and institutions.

3. **The intellectual and spiritual pioneer.**—A study of our cultural history shows that the great steps in social progress have been made under the leadership of the scientist, the skilled statesman, the moral prophet, and the religious seer. These men become dissatisfied with past conceptions, beliefs, and practices; they see their imperfection and their inadequacy, and set about to devise new ways and methods of dealing with nature and man. So great has been the influence of outstanding individuals through history that some historians have attempted to write history as biography. This doubtless is a one-sided view, yet without the great creative and constructive minds who pioneer in the special sciences, in education, in statecraft, in industry, in morals and religion, and the fine arts, there could be little social evolution. The exceptional individual is needed to awaken and stir the masses to new and higher conceptions of the world and life. The group mind does little or no creative thinking. In fact, the inertia and lethargy of the group mind often strenuously opposes any change from the customary views, beliefs, and practices.

4. **Education.**—By means of education, society in every generation seeks to make available to the children and youth the customs, traditions and beliefs which the adults hold to be valuable for the welfare of society. In primitive

society little or no conscious effort is made for the training of the young. Later, in the initiation exercises, education becomes a matter of some thought and purposive effort. From these simple initiation ceremonies, through such stages of development as training in the home by the parents, by priests in places of worship, to private academies, public schools, colleges, and universities, there is an increasing amount of conscious thought and endeavor to provide the means of education. In the countries of the Western world, attendance at the public schools is regarded as of so much importance to general welfare that it has been made compulsory. Such problems as the nature of the child, questions relating to content and method in teaching, and to buildings and equipment, are being studied with all the vigor and intelligence that scientific scholarship can command.

What does society hope to accomplish through these improved means and methods in education? (*a*) It hopes to mold and transform the plastic, innate dispositions of the growing child and direct them upon proper objects. (*b*) It aims to make available to the child and youth the history and best traditions of our social institutions—the family, the state, the church, industry, and so forth. (*c*) It seeks to acquaint the child with itself, its body and its needs, its unfolding moral, religious, and esthetic capacities, so that it may grow up to become a healthy and useful citizen. (*d*) It tries to inform youth upon the latest achievements in scientific knowledge, both in the natural and social sciences, in order that the most intelligent methods may be employed by the next adult generation in coping with the problems of life. The schools, colleges, and universities are not only research societies, but institutions in which comparisons are made before the young of old and new methods in dealing with problems in the physical and social orders. By means of laboratory experiment and field work, ideas, beliefs, and practices are being tested and sifted. Because of these aims, more or less imperfectly realized, education, with all its accoutrements, is the most significant instrument or agency by means of which society hopes to create its future and control its destiny.

IV. Inorganic Evolution

The physical world itself, in the midst of which organic and social evolution takes place, appears to be a product of evolution. The ancient Greeks looked for a ''substance of substances'' out of which the changing forms of physical things might come and to which they might return. In modern times the geologist, the astronomer, the physicist, and the chemist have confirmed the suspicions of the scholars in the ancient world that change and time have left their marks upon the earth, the sun, and the stars. In other words scientists are convinced that evolution is cosmic in its scope and that the changes in the organic and the inorganic realms are each but aspects of a universe in the process of becoming.

We turn to notice briefly some of the views on these three phases of inorganic evolution.

A. Cases of Inorganic Evolution

1. **The evolution of the earth.**—The heavenly bodies may be divided roughly into planets, or ''wanderers,'' of which our Earth is one, and the stars, of which the Sun, the center of our solar system, is a member. Both planets and stars, or suns, are believed to have had a similar origin; namely, an original gaseous or nebular material, which, through rotary motion and the casting off of spiral nebular knots, formed suns and planets.

Two theories have been proposed in modern times to explain the origin of the earth. The older of them is known as the *nebular hypothesis* and was first advanced by the philosopher Immanuel Kant, in 1755. Without knowing of Kant's speculations, the mathematician and astronomer Laplace published a similar view in 1796, speaking of it as "conjectures which I present with all the distrust which everything which is not a result of observation or of calculation ought to inspire."[30] The nebular hypothesis conceives the original state of our solar system as an incandescent gaseous nebula, considerably more extended in space than our present solar system, and rotating like a solid body. Cooling while it rotated, it took a disklike shape, contracted and threw off rings or spiral knots from the edge of the disk. These spiral knots became planets. These bodies continued to cool, contracting and increasing their speed as they in turn threw off rings. It was in this way, perhaps, that the planets gave birth to their satellites, for example, the earth's moon. The large nebular material which remained at the center became the sun, about which the smaller bodies or planets continued to revolve. For reasons which need not be mentioned here, this theory is now practically abandoned.

The second and more generally accepted theory on the formation of the earth is the *tidal or planetesimal theory* of Professors Chamberlain and Moulton of Chicago University. This theory begins by assuming the sun's existence, resulting from the condensation of a nebula or as a spiral knot, and then infers that the gravitational force of a passing star lifted a portion of the sun's gaseous mass free, which portion became broken up through rotary motion into the eight planets. According to this view, the primitive earth had a diameter of only about 5500 miles. It has grown to a diameter of 8100 miles by drawing to itself swarms of meteors (planetesimals) and then through a cooling process reduced to its present diameter of about 7900 miles. On this theory, the earth was built up, after the original gaseous core, by dustlike particles of solid matter. That the earth has gone through periods of development involving eons of time is clear from the geologic record in the soil, rocks, rivers, and mountains. These strata of earth and rock bear in their depths not only their own history, but also that of plant and animal life.[31]

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[30] Quoted from Thomson, "Concerning Evolution," p. 3.

2. **The evolution of stars.**—Any effort to explain the origin of the earth and our solar system involves considerable speculation. To explain the origin of the stars involves still more of the conjectural. Yet the composition, distance, and age of the stars is now readily computed by means of spectroscope and telescope. The proof of the similarity between our sun and the stars has been brought out through the spectroscope. That the stars, like our sun, have their origin in nebular material is rather firmly established. Hundreds of thousands of nebulæ, somewhat organized nebular material, have been definitely located, and besides there are vast areas of apparently unorganized nebular stuff. Just how and by what stages this nebular stuff evolves into a star, and by what stages, possibly, it becomes extinct, is a matter of speculation. About every five years some astronomer announces the appearance of a new star. It probably had its birth years, if not centuries, ago, since time is required for the light signal to reach the earth. Whether stars actually die is not certain, though it is known that some turn red, which indicates age, and others pass out of sight entirely. It is quite reasonable to believe that in the course of astral evolution "birth" and "death" are as common in the astral world as they are upon the earth.

Does this mean that the universe as a whole, or even our earth, is running down or dying? Some writers, among them Bertrand Russell and Anatole France, have pictured the time when the earth will be cold and uninhabitable, a desolation of frozen ruins. Such a view might follow if the nebular hypothesis is true. It might conceivably be true also on the basis of the present physical and chemical theory of matter. If, as some chemists are disposed to believe, all chemical elements are tending to a state of equilibrium, because of inactivity or because all have finally been transmuted into one kind, then possibly after several hundred trillion years death and silence will reign supreme on the earth. Uranium, for example, dies slowly into lead, but lead, so far as we know, does not wind itself up again into uranium. It may be that that chemical synthesis in nature which by slow processes of inorganic evolution brought into being one by one the ninety-two elements, is at an end, at least for a time. However, on the planetesimal theory, supplemented by our present knowledge of radioactive substances in the earth and elsewhere, we have grounds for believing that our solar system, already several hundred trillion years old, may continue indefinitely. In his Huxley lecture delivered in London in December, 1925, Sir Oliver Lodge, the eminent British physicist, advanced the view that the universe renews itself in cycles and that it need not be thought of as having either beginning or end. At any rate, it appears that the universe has not run down as yet, and if, as scientists tell us, it is trillions of years old, it is probable that it may continue for millions more.

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[31] *Cf.* Thomson, "Concerning Evolution," p. 8; "Outline of Science," Vol. IV, p. 919.

3. **The evolution of the elements.**—Not only in the suns, stars, and planets is there evolution, but chemistry and physics tell a similar story about changes in the microscopic and ultra-microscopic world of the atom. The ancient alchemist sought means of transforming the baser metals into the finer ones. Until recent times this was thought by scientists to be impossible. Such elements as were known to exist were believed to be fixed and permanent foundations of the material world. But a beginning in transformation has been observed under laboratory conditions. Uranium (No. 92) and thorium (No. 90), for example, have been transmuted into other elements; and radium (No. 88) has been changed into helium (No. 2). When it is remembered that the atoms of all the elements are believed by physicists to be made up of two kinds of particles, positive and negative charges of electricity, and

that their differences consist in number and arrangement of the particles, it seems entirely reasonable to suppose that transmutation from one to another may take place. Radioactive substances, whose atoms are unstable, seem to be transmuting themselves spontaneously into lead.

V. Theories of General Evolution

Before leaving our study of the phases of evolution, it may be well to consider briefly typical philosophies of evolution. As might be expected, a philosophy of evolution takes the different strands in the evolutionary process—for example, the inorganic, the organic and the social—and weaves them into a single, unified conception, relating each phase to the rest. Let us examine four such views of cosmic evolution.

A. HERBERT SPENCER'S THEORY OF COSMIC EVOLUTION

Herbert Spencer (1820–1903), one of the encyclopædic minds of the nineteenth century, in his ''First Principles'' published in 1862, sets forth a theory of cosmic evolution which is very inclusive in scope. The ultimate cause or reality behind the evolutionary process, Spencer held, we do not know and cannot know. He calls it the *Unknowable.* The reason why we cannot know the Ultimate or Absolute Ground of existence, he held, is twofold: (1) All human thinking is relational; it involves relations of likeness and difference. To non-relational thought we cannot go. The finite cannot apprehend or comprehend the infinite. (2) The sciences, in dealing with the facts of sense experience for the purpose of forming theories and laws, can never give us certainty. They yield probability only, even when they attempt to define space, time, matter, and mind. Now such ultimates as we do know are matter, motion, and force, these being *modes* of the Unknowable. The world as we know it, with its multiplicity of parts and processes, is the product of the continuous redistribution of matter, motion, and force.

Spencer defines evolution as "an integration of matter and concomitant dissipation of motion; during which matter passes from an indefinite, incoherent, homogeneity to a definite, coherent heterogeneity; and during which the retained motion undergoes a parallel transformation." This statement illustrates in a sense what a definition should not be, yet when studied closely it is found to be a compact description of all aspects of evolution taken together. It describes how the fiery nebulæ (if there were such) solidified and organized into suns, planets, and satellites; how the separation of land and water, the appearance of mountains and valleys represent differentiations in preparation for plants and animals; how out of undifferentiated protoplasm came the single-celled organisms, homogeneous and incoherent; how out of the single-celled organisms by differentiation came the many-celled, with organs and structures adapted to different functions. Finally man appears with all his capacities and functions —the family, the state and government, education, industry, morals, religion and the fine arts. Thus Spencer's law of evolution was believed by him to be applicable to all processes and phenomena in the universe, the special laws formulated in the special sciences being but expressions of the general law.

Our final and constructive philosophy of evolution will be offered in the next chapter. It may be said here, however, that while Spencer offers a plausible naturalistic philosophy of evolution, it suffers from several weaknesses. (1) There is a strain of positivism and agnosticism running through his philosophy which, to the extent that it is asserted, is the negation of philosophy and which, to the extent that it is denied, involves him in inconsistencies. For example, if we do not know the nature of reality, how can it be said that it is or is not Force? (2) In the second place, Spencer does not make clear how mind is related to matter, motion, and force. He attempts to steer a middle course between materialism and idealism, without complete success. Spencer's philosophy was highly influential in the latter half of the nineteenth century, but his service is most valuable in psychology, education, social ethics, and religion.

B. C. LLOYD MORGAN'S THEORY OF EMERGENT EVOLUTION

In the Gifford Lectures for 1922, C. Lloyd Morgan offers a philosophy of evolution under the title "Emergent Evolution." Here is found a representative present-day attempt to go beyond a mere descriptive account of the steps in evolution and offer a constructive philosophical explanation. According to Morgan *evolution* is the name we give to the orderly sequence of events in nature. Viewed as a whole, nature presents a hierarchy of levels with physical events or matter on the lowest plain, organic events or life supervening upon matter, and, highest of all, mental events or mind. Thus the world of things and processes is likened to a pyramid in which the higher evolves or *emerges* out of the lower because of new "types of relatedness." New entities appear; for example, atom, molecule, crystal, organism, and person, through a new kind of relation or sets of relations. Because of these new relations, new qualities and properties emerge, provided the relations are *effective.* Such new qualities and properties on any level determine in new types of *effective relatedness* and new things *emerge* on a higher level. In this way, out of physical things, living things emerge, and in the midst of living things mind emerges.[32]

When the question of the *cause* or *agency* whereby this emergent process moves from one level to another is raised, Morgan clearly and definitely affirms his belief in what he calls Activity, or God. "For better or for worse," he says, "while I hold that the proper attitude of naturalism is strictly agnostic, therewith I for one, cannot rest content. For better or worse, I acknowledge God as the Nisus through whose Activity emergents emerge and the whole course of emergent evolution is directed. Such is my philosophic creed, supplementary to my scientific policy of interpretation."[33] Morgan here means to say that a Divine Activity is "omnipresent and manifested in every one of the multitudinous entities within the pyramid. God, if in any, is in all, without distinction of entities."[34] This is the strictly immanent conception of deity clearly and forcibly advanced by Spinoza in the seventeenth century, to whom Morgan acknowledges indebtedness.

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[32] See Lecture II, esp. pp. 35–39. Morgan distinguishes two types of relatedness; namely, *intrinsic,* by which he means relations within a system, and *extrinsic,* by which he means relations of one system to another. See p. 69.

A philosophy of evolution similar to Morgan's is set forth in Samuel Alexander's "Space, Time, and Deity." Instead of beginning with matter on the lowest level, Alexander postulates space-time or point-instants. From point-instants emerges matter with primary qualities, and in later stages, the secondary qualities. Later still, and by an ascending scale of levels, the variant forms of life and mind appear. Finally, when mind reaches the stage of reflection, the tertiary qualities of value, that is, truth, beauty, and goodness, emerge. Beyond these and at the apex of the pyramid of emergent entities, the quality of deity appears, the latest and highest product of the evolutionary process. Deity, in a sense, however, has been present at every stage of evolution as the "beyond" to which the level just below aspires. Alexander thus places God at the end and not at the beginning of the process of evolution.

C. HENRI BERGSON'S THEORY OF CREATIVE EVOLUTION

The term *creative evolution*, widely used by biologists and philosophers, is intended to be descriptive of the evolutionary process as now generally understood. It implies a rejection of the preformation or encasement theory commonly held by biologists in the seventeenth century. According to the preformation theory, evolution is a process of unfolding what is already enfolded or preformed from the beginning. The creative evolution theory, otherwise called the *epigenetic view,* was advanced as early as 1759 by Casper F. Wolff, but it did not meet with general acceptance till after the publication of Charles Darwin's "Origin of Species" in 1859. In a word, the epigenetic view conceives novelties and individualities as the products of a creative synthesis. That is, just as in the union of chemical elements substances or compounds are formed with qualities and properties not contained in the original elements, so in the combinations effected in nature, the qualitatively new is a product of old elements. Unions in the plant and animal realms produce after their kind, yet with novelty and individuality.

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[33] "Emergent Evolution," p. 36. (Henry Holt and Co., 1924.)
[34] *Ibid.*, p. 13.

Henri Bergson's philosophy of evolution as explained in his attractively written book, "Creative Evolution," is unique among the recent statements for the epigenetic view. Bergson is concerned primarily with the evolution of living things, yet he does not fail to take account of matter. At the heart of things is the vital impulse (*l'élan vital*), life, or consciousness, which expresses itself in an upward tendency of striving to increase individuality. Life has the trait or quality of spontaneity. It is both dynamic and creative. It ever gives rise to new and novel forms. The direction which life takes in its creation of the new is not predetermined. An element of chance is involved, and the process is essentially unpredictable in its character. Life, then, for Bergson is a tendency, an urge which divides itself as it grows and moves forward. Evolution, Bergson observes, sometimes involves a marking of time and even a turning back. The outstanding divergent directions which life takes in its evolution are the plant and animal kingdoms. Plants and animals have a common stock, and, on certain planes, have common characteristics; in fact they are so much alike that one ''group must not be defined by the possession of certain characteristics, but by its tendency to emphasize them.''[35]

When one inquires more deeply into the relation of plants, animals, and man, one is struck with the difference between Bergson's view and that of most biologists. He says: ''Vegetative torpor, instinct, and intelligence—these then, are the elements that coincided in the vital impulsion common to plants and animals, and which, in the course of a development in which they were made manifest in the most unforeseen forms, have been dissociated by the very fact of their growth. *The cardinal error, which, from Aristotle onwards, has vitiated most of the philosophies of nature, is to see in vegetative, instinctive, and rational life, three successive degrees of the development of one and the same tendency, whereas they are three divergent directions of an activity that has split up as it grew.* The difference between them is not a difference of intensity, nor more generally of degree, but of kind.''[36] Thus, for Bergson, what was originally a single tendency—namely, life—when it breaks up or divides, tries to preserve in the diversified and specialized forms everything which was present in the primitive tendency. Hence the formation of identical complex mechanisms on independent lines of evolution, for example, circulation, respiration, and sex. For the same reason we find instinct and intelligence in so many living things, though the highly specialized function of only a few.[37]

Bergson does not make his conception of matter entirely clear. Sometimes he conveys the impression that matter is a by-product of the forward and creative movement of the vital impulse. Likening the evolution movement to a vast shell which, when it is shot, bursts into pieces, the fragments themselves bursting, *ad infinitum,* Bergson contends, so it is when life breaks into individuals and species. It depends, he thinks, on two series of causes: first, the resistance which life meets from inert matter; and second, the explosive force which life bears within itself. Bergson goes on to speak of life insinuating itself into the physical and chemical forces of nature, which suggests the co-existence of matter with life. The necessity of life to adapt itself to matter, as the stream must adapt itself to the ups and downs or the contour of the land through which it flows, suggests that matter is coeval with life.

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[35] ''Creative Evolution,'' pp. 87, 106.

[36] *Ibid.*, p. 135 (By permission of Henry Holt and Co.). See also Ch. II.

[37] For Bergson's views on intelligence and instinct, see pp. 135–185.

D. William Patten's Theory of Evolution as Strategy

"The Grand Strategy of Evolution," by Professor Patten, an American biologist and authority on vertebrates, offers a cosmology and a social philosophy upon the data of biology. The scope of Patten's theory of evolution is cosmic. There are no seams, he holds, no patchwork, no barriers between what was, what is, and what shall be. Science finds it unnecessary to assume that anything is set apart or sanctified by an instantaneous and independent act of creation.

He places special emphasis upon the following points: (*a*) That evolution is "a creative drift from the futile conflict of chaos toward a more stable structural organization and unity. . . ." Nature grows and progresses, producing individualities and novelties as she advances. It is essentially a movement from chaos, involving isolation, impotence, uniformity, conflict, and chance, to order, stability, power, unity, and perfection. (*b*) It is a process in which increasingly the "right" elements come together in the "right" time and place to form "creative dividends" in the form of higher orders of being. Self-preservation, self-sacrifice, and coöperation, though manifest in life and mind, are as old as the universe. "There is nothing new in 'humanitarian' methods. . . . Evolution is a process of more and more effective coöperation.'' Patten challenges the Darwinian view that evolution takes place by ''competition through mastery by brute force, or by strategy, through selfishness and the license of freedom uncontrolled.'' The real ''strategy'' of evolution lies in benevolent, constructive, self-giving activities in which the new appears through the disciplining of the old by mutual service. (*c*) ''Nor does 'blind chance' rule in nature, for the dice are loaded in favor of things in the 'right' time and place, as against those in the wrong time and place; in favor of those things which act constructively as against those which do not.''[38]

When Patten says that there can be ''no evolution without creation,'' and that ''the ceaseless flow of creative service is evolution, and evolution is serial creation,'' he implies, as in the case of emergent evolution, that life, mind, and matter are levels of existence in one continuous cosmic process. The quality of coöperativeness, order, unity, and freedom under discipline, is what distinguishes one plain or level from another. For Professor Patten, ''soul'' or ''spirit'' is the unique attribute of various social groups which is produced by the ''superchemistry'' of individual selves acting in coöperation. A college, city, or state is a new organism, which cannot be interpreted in terms of its constituent parts.[39]

J. E. Boodin's Theory of Cosmic Evolution

In his book, ''Cosmic Evolution: Outlines of Cosmic Idealism,''[40] Professor J. E. Boodin objects to the view that evolution is a one-way series of changes from the simple to the complex, as held by Herbert Spencer, S. Alexander, *et al.* For Boodin the universe as a whole does not evolve. It contains within itself all processes of evolution and also of devolution. Evolutionary changes are everywhere subordinated to cosmic structure. Evolution takes place by law and not by chance. There must be a reason for it. He accepts the scholastic maxim, *e nihilo nihil fit,* from nothing comes nothing. No cause can contribute to its effect what it has not to give. If and when there is evolution anywhere, it must be due to higher levels existing elsewhere. All evolution is due to "cosmic interaction" and "control." It is not by chance that organisms have developed eyes, ears, and other senses; they are creative adaptations to specific energy patterns in the environment. Nor have intelligence, creative imagination, and a sense of beauty been developed without a directive principle. The story of evolution is thus not the story of a one-way process from the simple to the complex, from space-time to life, mind, and God, as Alexander holds; rather it is the story of a structure of different levels interacting. Evolution on a lower level is a response directed and controlled by a higher level, and God as supernatural is the highest level of the cosmos.

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[38] *Op. cit.*, pp. 26, 27, 28, 44. (Richard G. Badger.)

[39] See *op. cit.*, pp. 29, 41–42.

[40] The Macmillan Co., 1925.

Professor Boodin is here objecting, and we believe rightly, to what philosophers of different schools have made repeated protest against; namely, the use of the category or concept *evolution* as a philosophical cure-all. Can evolution be applied to the standards of truth and value by which evolution itself is judged? Does evolution apply to the principles of logic and mathematics? Such idealists as A. E. Taylor and Bernard Bosanquet, and such realists as Bertrand Russell and E. G. Spaulding would answer in the negative. Some personal idealists would hold that at least God is eternal and unchangeable. In the view of these philosophers the fact of *permanence* is as fundamental to the nature of things as the fact of *change*. For many idealists and realists alike, the permanent element or elements in the cosmos, though variously designated, are the ground and possibility of all change. A. E. Taylor makes his protest on the ground that in biology, where the concept of evolution is firmly established, evolution means change brought about through the interaction of the *environment* and the *environed.* And he asks, what is the environment of the cosmos as a totality? Plainly, there is none. Therefore, if we are to avoid an infinite regress of environment and the environed, we must conclude that there is a limit to evolution. There must be something behind all evolutions, something to supply it with "material," "driving force," and "direction," and this something must be strictly eternal. These abiding principles or elements are regarded as wholly immanent and not external to the universe.[41]

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[41] See F. O. Bower, *et al.,* "Evolution in the Light of Modern Knowledge," Ch. XII, "Philosophy," by A. E. Taylor. See also E. G. Spaulding, "The New Rationalism," Ch. XLIII. (Henry Holt and Co.)

Chapter XI

THE CONCEPT OF LIFE IN THE THEORY OF EVOLUTION

HAVING examined the meaning of evolution as an explanatory concept and indicated its application to the organic, social, and inorganic realms, we now turn to the more specific question: How are life processes and evolution related?

I. The Classification of Beings into Living and Non-Living

Common sense, and science as well, classifies the objects of nature into living and non-living things. Among the living are classed such familiar objects as bacteria, plants, animals, and man. As manifestations and creations of the human order must be included all the phenomena connected with social institutions and civilization: art, science, religion, morals, government, education, and so forth. Among the non-living are classed such objects as stones, rivers, mountains, buildings,—in short, the mere chemical elements either in simple or compound form. On the basis of this rough classification, we have two types of sciences; namely, (*a*) the physical, which deal with the nature of non-living things and their relations; and (*b*) the biological and the social (psychology included), which deal with the nature of living things and their relations. The question accordingly arises: What is it that distinguishes the living from the non-living? On what basis may such a classification of the objects of nature be made?

A. The Essential Character of Living Things

The basis on which this separation of the objects of nature takes place is in terms of internal structure and function, and external behavior. A living thing is called an *organism,* because its internal make-up is such that the part functions for the whole and the whole for the part. The living thing is thus an organization or system of parts which functions as a whole. So interdependent and interrelated are the parts and the whole that injury to the part impairs the whole. On the contrary, health and vigor of the part is reflected throughout the whole organism. In short, as compared with a non-living thing, an organism is autonomous. This interdependence of part and whole, while true of all living things, is least manifest among lower forms and is increasingly apparent as we move upward from the lowest to the highest. Non-living things, of course, have organization too, as, for example, a stone and a snowflake, but it is not so complex and involved.

In addition to this internal character of organization, living things as wholes (although often as parts) have certain properties and capacities which non-living things do not have, or else have to a negligible extent. Living things, for example, are irritable—that is, they have the power to respond to stimuli; they have the power to adjust themselves to their environment, to take nourishment and assimilate food, to grow and repair or restore injured parts, to produce and use devices for self-protection, and to reproduce their kind. In short, living things are autonomous; they have their own laws. But, in addition, life in its multitudinous forms is insurgent; in the words of Professor Patrick, it presses "with patient and never-tiring persistence into every nook and corner of the earth's crust, into the depths of the seas, under thick antarctic ice, in hot springs, on mountain tops, in arid plains."[1] Life is inventive, it uses strategy, it is selective. All living things have the above capacities in greater or less degree. When, however, we consider the higher organisms, the internal organization of structure, particularly the neural and muscular tissue, becomes so complicated that other properties and capacities appear, such as sensibility, instinct, selective choice, and memory. In the highest organism, man, mind appears, with its capacity of rational and reflective inquiry and a limited power of self-determination. Here appears also the sole instance, so far as we know, of a being who contemplates the universe and attempts to solve the riddle of its meaning, including his own origin and destiny.

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[1] G. T. W. Patrick, "Introduction to Philosophy," p. 90. (Houghton Mifflin Co., 1924.)

B. The Origin of Life

It was known, doubtless, to early man that living things propagate their kind. At any rate, since the ancient Greeks, natural scientists have known that in the case of most organisms, living things come from parents similar in structure. Until the nineteenth century, however, *abiogenesis,* that is, the creation of a living thing out of inorganic matter by spontaneous generation, was also accepted. The Roman poet, Lucretius, in his "*De Rerum Natura,*" set forth the view that bits of earth under conditions of warmth and moisture in time would bring forth living forms. Such animals as frogs, eels, and mice, as well as caterpillars, insects, and worms, were thought to have a mysterious origin in some favorable state of inorganic material. Decaying meat was thought of as providing an especially favorable condition for the generation of living things. In 1668 the Italian naturalist Redi disproved abiogenesis (or heterogenesis) for the time, but because after his time new microscopic forms of life were discovered, it remained for the French biologist, Louis Pasteur, in 1860, to formulate again the plain question: Can matter organize itself? Can living beings come into the world without having been preceded by beings similar to them? He put the question to a second experimental test. By careful experiments with sterilized and unsterilized liquids he proved conclusively that the micro-organisms which he was studying, and which were commonly thought to arise spontaneously, had in reality been propagated by their kind. The parent micro-organisms were discovered by Pasteur to be floating in the dust-laden air and by this means were introduced into a sample of sterilized liquid. Many scientists have concluded from Pasteur's experiments that *biogenesis* is universal and that it has always existed as the law of the origin of life. It is clear, however, from the limited observation and experiments of Pasteur that nothing was settled as to: (1) the ultimate origin of life on this planet; or (2) that life always comes from previous life; or (3) that living things may not be created synthetically by the chemist from inorganic substances. Pasteur's researches with bacteria laid the foundation of the fruitful science of bacteriology, a study which has thrown much light upon disease, the art of sanitation, aseptic surgery, and even agriculture.

The question remained, however, how did the first living germ come to the earth? If it is true, as evolutionists hold, that: (1) the earth was millions of years in preparation for the living things which were to occupy it;[2] and if (2) the biologist is correct that *omne vivum ex ovo*—all life comes from the egg, how did life begin, or where did the first egg come from?

Three answers have been offered: (1) The first germs came to this earth from some other planet or heavenly body, being carried through space in the form of a microscopic germ by light radiation or hidden away in the crevice of some meteor which chanced to alight upon the earth's surface. This was held by Svante Arrhenius (1859–1927) and by other eminent scientists. This solution of the problem is of little value, since it only transfers the difficulty to another planet or star. (2) Others have held that life came to our planet through the special creative act of God. This is known as the special creation theory, and it has taken many forms all the way from a simple literal rendering of the Genesis story to the ingenious devices of those who see in the Genesis account an anticipation of all that contemporary science has discovered. The value of the creation theory depends upon how it is interpreted. If it is held that at some remote moment in time God suddenly decided to people the earth with all living species and by a fiat of will brought them into existence, then scientists are little impressed. It is generally assumed by scientists that nature has operated in the past as she does now—that is, by processes that are orderly, continuous, and progressive. Moreover, this solution raises more problems than it solves in the field of geology, paleontology, and biology, to say nothing of the problems it raises about the character of Deity. However, if God be viewed as a cosmic energy, an eternal creative Activity,[3] who is ceaselessly at work throughout the universe, then, as we shall see in Chapter XX, the theory may be the most intelligible of all. (3) The third theory, namely, that of the gradual evolution of living things from the non-living elements of the earth, is the one generally accepted by biologists to-day. Henry F. Osborn says: "The mode of the origin of life is a matter of pure speculation, in which we have as yet little observation or uniformitarian reasoning to guide us. . . ."[4] Now and then our newspapers announce that some biochemist has succeeded in creating life artificially by combining inorganic compounds. Doubtless something approximating living protoplasm, with some of the properties of living matter has been created synthetically, but no one has yet succeeded by artificial synthetic means in creating living matter with the power of reproduction. It may be done sometime, who knows? It may have taken place in the past, we do not know. What may have taken place millions of years in the past when a torrid sun shone upon the wide expanse of waters, we can only conjecture. Uniformitarianism in evolution seems to require that by natural synthetic processes the lowest form of the organic slowly emerged from the inorganic.

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[2] See Henry F. Osborn, ''The Origin and Evolution of Life,'' p. 27f. (Charles Scribner's Sons, 1917.)

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[3] *Cf.* C. Lloyd Morgan, *et al.*

[4] "The Origin and Evolution of Life," p. 67.

Life seems to have appeared upon the earth by some creative process. Whether this could be brought about by wholly naturalistic and mechanistic processes, or whether it is necessary to postulate the activity of an eternal or creative life principle, will be considered at the close of this chapter and again in the next chapter. It is appropriate to consider here, however, the controversy between the mechanists and the vitalists in their explanation and interpretation of living things. The outcome of this debate has an important bearing upon several problems in philosophy.

II. The Debate Between Mechanistic and Vitalistic Theories of Life

Few questions of a scientific character are more crucial for philosophy than the controversy over *mechanism* and *vitalism* in biology. Not all questions in philosophy would be settled by an agreement among biologists upon this one, but much light would be given upon the metaphysical problem of mechanism *versus* teleology as applied to the cosmos. Now what is the biological aspect of the problem? Reduced to plain words, it is this: Can the structure, the internal functioning, and external behavior of organisms be completely explained in terms of the working concepts of physics and chemistry? Can the activities and processes which take place in organisms, as parts or wholes—those of micro-organisms, plants, animals, and man—be explained in terms of the same forces and no others than those exhibited in the formation of planets, stars, rocks, soil, and chemical compounds?

Mechanism as a theory answers that a chemico-physical explanation is adequate. It holds that in the realm of the inorganic when and in so far as the total chemical and physical conditions of an event or process are known, to that extent consequences can be predicted. It operates on the assumption that nature's processes are deterministic, quantitatively measurable, and therefore predictable. Life processes, it holds, constitute no exception. Vitalism, on the other hand, holds that there is in organic processes, in addition to the chemico-physical changes, an indeterminable qualitative activity called a "life principle," a "psychoid," an "entelechy" or "organizing principle," which gives direction to the process. In other words the vitalist contends that in addition to mechanical causation, there is in life processes a teleological causation.

A. The Case for Mechanism in Biology

The mechanistic conception of living things was first advanced by Leucippus and Democritus in the fifth century B.C. The same view was taught in the moral philosophy of Democritus' disciple, Epicurus, of the fourth century B.C. In the first century B.C., Lucretius, the famous Roman poet, advanced a completely materialistic conception of things in his *"De Rerum Natura."* From the first to the fifteenth century of the Christian era, there was little that was new in philosophy that was even mechanistic, because of the dominance of the Church and Christian institutions. The beginning of modern science in the fifteenth century and the work of such men as Copernicus, Galileo, Kepler, and Newton encouraged a return to the mechanistic theory. It was further encouraged by such dualists as Descartes and Locke, and the materialist, Thomas Hobbes, of the seventeenth century.

In the eighteenth century many French and English psychologists and physiologists began to employ the mechanistic point of view in explaining animal and human life. Descartes had accepted the mechanical explanation of the animal organism, but had held that man is a dual creature, made up of mind and matter—a mechanical part, matter, and a purposive part, mind. This theory had suggested to David Hartley (1705–1757) and Joseph Priestley (1733–1804) in England, as well as to Julien de La Mettrie (1709–1751), Denis Diderot (1713–1784), Pierre Cabanis (1757–1808) and Paul d'Holbach (1723–1789) in France, that possibly the mental processes in man could be explained as vibrations of material particles in the brain. This reduction of the phenomena of mind to the motions of mass particles in the brain was also accepted in modified form by two eighteenth century biologists, namely, Buffon and Robinet. In more recent times mechanism has been supported by the German biologist, Ernst Haeckel (1834–1919). Yet, in his ''Riddle of the Universe,'' he postulates as the ultimate substance of things a ''psychoplasm'' and grants that ''all living cells possess psychic properties.'' While Charles Darwin's ''Origin of Species'' was interpreted as favorable to mechanism, it cannot be said that its author had settled the question in his own mind.[5] Herbert Spencer's theory of cosmic evolution explained all natural phenomena, including living things, in terms of the redistribution of matter and motion. Thomas H. Huxley's ''Physical Basis of Life'' was intended by its author as an exposition and defense of mechanism.

Having traced in outline the history of mechanism as applied to the explanation and interpretation of living things, we return to the evidences for mechanism as they are presented by the leading mechanistic biologist of America, Jacques Loeb. The following is a summary of an important article by Loeb, called ''The Mechanistic Conception of Life.''[6]

1. The arguments of Loeb:

a. Loeb's first argument for mechanism is that, contrary to the commonly accepted view—namely, that a new animal organism can come into existence only through the union of an egg (female egg cell) and the spermatozoön (male fertilizing cell)—*eggs may be activated by physico-chemical agencies.* For example, Loeb has taken the unfertilized eggs of sea urchins and caused them to develop into swimming larvæ by treating them with sea water to which had been added a definite quantity of salt or sugar. Others experimenting with the eggs of worms and other low-grade organisms achieved similar results. To quote, "We, therefore, see that the process of the activation of the egg by the spermatozoön, which twelve years ago was shrouded in complete darkness, to-day is practically reduced to a physico-chemical explanation." Instead of assuming that life begins with the entrance of a life principle into the body, and death with the departure of this principle, Loeb says: "Scientifically, however, individual life begins (in the case of the sea urchin and possibly in general) with the acceleration of the rate of oxidation in the eggs, and this acceleration begins with the destruction of its cortical layer. Life of warm-blooded animals—man included—ends with the cessation of oxidation in the body." Loeb holds that experiments show that the function of the sperm in relation to the egg is to accelerate oxidation by destruction of the cortical layer, and since this can be accomplished by physico-chemical means, it is unnecessary to invoke a metaphysical "life principle" to explain the origin of living things.

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[5] *Cf.* his ''Autobiography.''

[6] *Popular Science Monthly,* Vol. LXXX, pp. 5 ff.

b. Loeb points out that *heredity, now explained in terms of the chromosomes, further establishes the theory of mechanism.* It is the chromosomes that are believed to be bearers of hereditary traits. These, he believes, are chemical substances, and when the chemistry of these complex substances is more thoroughly understood, the physico-chemical explanation of living things will be demonstrated.

c. In the third place, Loeb takes up the problem of adaptation of the part of the organism to the whole—a point especially stresed by vitalists—and *explains adaptation in physico-chemical terms and by natural selection.* Here again, Loeb contends that those who resort to vitalism, harmony, or dominants (Renke) are dealing in mere words. It is possible, he points out, to fertilize the egg of each marine bone fish with the sperm of any other marine bone fish. But the embryos live only a short time, a few months at most. Why? Because of lack of adaptation in egg and sperm in consequence of a chemical difference, that is, heterogeneous sperm and egg. The same type of faulty embryos was produced with pure breeds of bone fish by treating the eggs with temperature conditions and chemical elements. Loeb concludes that it is entirely a matter of the velocity of oxidation in the cells. We get the notion of adaptation of parts to the whole because we perceive the harmonious systems and do not perceive the more numerous faulty and disharmonious instances in nature. Loeb says that in the mechanism of the atoms only a few among the possible combinations of chemical elements are durable. "Nobody doubts that the durable chemical elements are only a product of blind forces. There is no reason for conceiving otherwise the durable systems in living nature."

d. In the end Loeb's position leads him to *an explanation of man's inner mental life in terms of strict mechanism.* He asserts that such phenomena as animal instinct and will are explicable in the same ways as plant tropism. In the same way do certain insects and moths creep or fly to a light or a flower. These creatures seem no more able to resist light than the plant. Moreover, there are certain animals which have in their eyes and skins photosensitive substances which undergo chemical alterations in light, and in consequence their behavior is affected. Loeb holds that the activity of heliotropic animals is to be explained on lines similar to the behavior of heliotropic plants. Loeb climaxes his mechanistic theory of instincts by asserting the doctrine that man's higher conscious processes are themselves interpretable in terms of the mechanical instincts. We eat, drink, sleep, walk, work, and play, because we are compelled to do so. In like manner we strive for friendship, love, fellowship, beauty, truth, and goodness because we must. When and where these are not striven for, it is because economic, social, and political conditions are such as to warp and inhibit the inherited instincts and thus create a civilization with low morals. Loeb grants ''individual mutants'' may arise with one or another desirable instinct missing, just as ''individual mutants'' without pigments may arise in animals. If these mutants become numerous enough, they lower the moral status of the community. For Loeb, the only true ethical theory will be the one which recognizes that the behavior of man in society is mechanically caused.

2. Summary of arguments for mechanistic interpretations of life.—We may then state the position of the mechanists as follows. Life processes are not essentially different from the activities going on in inorganic substances: (1) because physico-chemical activities can be substituted experimentally for them; and (2) because the shroud of darkness and mystery is being rapidly pushed back by scientists who apply mechanistic methods in the laboratory. Even the vitalist, Loeb holds, when he wishes to make a contribution to biology, forgets and lays aside his vitalism. It is argued further that: (3) progress in the more exact inductive sciences, namely, phyiscs and chemistry, is dependent upon the adoption of the mechanistic principle. Synthetic chemistry, for example, began to make progress only when vitalism was abandoned. (4) Only by a mechanistic account of life phenomena can vitalistic processes and activities be made intelligible. Such mystery-laden concepts as ''entelechy,'' ''vital principle,'' ''originative impulse,'' and so forth, are not amenable to experimental observation. Lastly, (5) the mechanistic conception of life is not only compatible with the moral and esthetic experiences; it is the only conception of life which can lead to an understanding of them.

B. Evidences for Vitalism in Biology

Vitalism has a history reaching into antiquity, just as mechanism has. Aristotle (384–322 B.C.), says Hans Driesch, a German biologist, is not only a typical representative of vitalism in antiquity and the Middle Ages, but he is also a typical precursor of all vitalistic theories since his time.[7] To this founder of many sciences, there is "soul" throughout nature, even in inorganic nature. There are forces in nature which initiate and direct movements. Material bodies are the instruments of this dynamic element. In plants, animals, and man this dynamic element is called "soul" or "entelechy." It exists in all organic forms from plants to man in an ascending scale of bodies differing in complexity of structure and function. In plants it manifests itself in nutritious growth and reproduction; in animals, in all functions possessed by plants, and in addition, by sensibility, feeling, memory, imagination and association, thinking, and perceptual knowledge; in man it manifests itself in all functions possessed by both plants and animals, and, in addition, by reason, the appreciation of values, and power of self-determination. "Soul" or "entelechy," then, for Aristotle, is what moves the body, fixes its structure, and controls its behavior. It exists in every part and the whole of nature in varying degrees. According to Driesch, Aristotle's theory of life is pure vitalism, which, inasmuch as it arose without struggle against other doctrines, may be called primitive or naïve vitalism.[8]

As a vitalist, Aristotle's influence until modern times is paramount. William Harvey (1578–1657), the discoverer of the circulation of the blood and the champion of the dictum *omne vivum ex ovo,* is a vitalist and reclines somewhat upon Aristotle's view. George Ernst Stahl (1660–1734), in his "*Theoria Medica Vera,*" gives a logical treatment to the concepts *organism* and *mechanism* and subordinates the latter to the former. He says, "It cannot be too often repeated that the basis of life consists of activity, not matter; and of activity, not in matter, but operating on it in such a manner that the matter remains purely passive and indifferent, and merely obeys the activity which distributes and orders it in a given structure."[9] Stahl offered the first scientific system of theoretical biology after Aristotle, and it had a wide and deep influence upon contemporary biologists and those of the next century. Caspar Friedrich Wolff (1733–1794), the father of epigenetic descriptive embryology, is, to use a phrase of Driesch, the "clearest and deepest representative of vitalism since Aristotle." He frankly faces the question of the relation of the vital process in the organism to the body mechanism and concludes that a vital force (*vis essentialis*) must be assumed to be at work in order to explain what goes on. The older vitalism reaches its height and the new vitalism begins with the writings of J. F. Blumenbach (1752–1840) who, though his views do not differ greatly from those of Wolff, is the first to look for and find (in his own view) real proof of vitalism.

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[7] See "The History and Theory of Vitalism," p. 12. (The Macmillan Co., 1914.)

[8] See *ibid.,* p. 19.

From Blumenbach down to the present, vitalism in one form or another, directly advocated or indirectly implied, may be found in the theories of biologists, physiologists, psychologists, and philosophers. The controversy between mechanism and vitalism has been kept alive principally by the enemies of vitalism, who in one way or another, have tried to weaken its case. Little that is new and convincing, however, appears from biologists until comparatively recent times. Most psychologists more or less evaded the problem involved by taking refuge in psycho-physical parallelism as a solution of the body-mind problem. Philosophers, with the exception of Schopenhauer and Von Hartmann, inclined to a static teleology, that is, that the organic and telic character of things is fixed and non-spontaneous. This position is about as disastrous for vitalism as chemico-physical determinism. In the late nineteenth century and early twentieth century, the American biologist, Edmund Montgomery, wrote extensively in defense of vitalism. He expressly opposed the mechanical interpretation of the organism and based his conclusions upon an analysis of the movement of protoplasm, on contraction of muscles, the divisibility of infusoria and the facts of regeneration in general. His chief works are: ''The Vitality and Organization of Protoplasm'' (1904) and ''Philosophical Problems in the Light of Vital Organization'' (1907).

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[9] Quoted from Driesch, "The History and Theory of Vitalism," p. 35. (By permission of The Macmillan Co., publishers.)

The distinction between descriptive teleology, static teleology, and dynamic teleology made by Hans Driesch is worthy of attention. He uses the term ''descriptive teleology'' to designate the simple existence of purposiveness. He applies the term ''static teleology'' to the other which is mechanical, and ''dynamic teleology'' to that which is characterized by an unanalyzable autonomy.

1. **The arguments of Hans Driesch.**—These constitute one of the strongest contemporary statements in defense of vitalism. In his ''History and Theory of Vitalism,''[10] are offered what the author calls, ''The Empirical Proofs of Vitalism.'' Driesch grants that all proofs of vitalism are indirect: ''They can only make it clear that mechanical or singular causality is *not* sufficient for an explanation of what happens.'' There are three arguments, and summarized, they run as follows:

a. Analytic experimental embryology shows that if by an operation, an embryonic organism, or even an animal, is deprived of some of its cells, the embryonic organ, or animal, left by the operation will develop as a whole, though sometimes in miniature form. Driesch calls such organisms or animals *harmonious-equipotential systems;* for example, take from the sea urchin what you will, and what remains will grow a complete sea urchin, though in smaller form.

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[10] Pp. 207 ff.

Mechanical causality cannot explain this; we must assume a "unifying or individualizing causality" to be at work. Physico-chemical things do not remain the same, that is, do not restore lost members, when you take from them some of their parts. Therefore, non-mechanical causality may be assumed to function in organisms.

b. Besides the harmonious-equipotential system referred to above, there is another type which Driesch calls the *complex-equipotential system.* The ovary is an example. In the former kind of system, the whole is formed by the coöperation of all the single elements; in the second kind, namely, the complex-equipotential system, each element by itself is able to form a *totality.* The ovary, for example, has come from a single cell in the course of embryology. This single cell has been divided and redivided many times, and the last products of this process of division are the eggs. Now Driesch asks: "*How could a machine . . . be divided innumerable times and yet remain what it was?* No machine, therefore, can be the test of embryology."

c. Driesch's third argument is based upon a study of human reaction to a stimulus. Human behavior involves two essential features or criteria. In the first place, what a man will do in a given situation depends upon what he has done or "experienced" before; that is, there is an "*historical basis of reaction.*" But the phonograph also acts upon the basis of its past impressions, and how does the reaction of the phonograph differ from the reaction of a man? The phonograph gives off what it has received "*in its very specificity,*" whereas the man under stimulus gives off a reaction which is a unique and individual answer. The historical basis of reaction in man is composed of a stock of *possibilities* for further acting, but these possibilities do *not* determine all further reactions in detail. The human reaction, thus, cannot be taken as a case of mechanical causality. There is no quantitative sum on the side of the stimulus which just equals a quantitative sum on the side of the reaction. In this view, the brain and the nervous system are a necessary means for bringing into connection the material nature and the acting factor, but they are not the acting factor.

Besides these "three proofs of vitalism," as Driesch calls them, he mentions the following *indicia* or evidences of vitalism: (1) facts connected with the processes of restitution, processes complicated and involved; (2) the phenomena of "equifinality," that is, the same functional results are reached on different morphogenetic lines. (Henri Bergson argues to a similar conclusion when he cites the case of the eye of the Pecten and of the vertebrate as instances of the formation of an identical organ by different means along divergent lines of evolution.[11]); (3) the facts of active adaptation among plants and animals, for example, the formation of immunity through the creation of "anti-bodies"; and (4) the phenomena of instinct and the rôle of instinct in living things.

In concluding our statement of Driesch's proofs of vitalism, it should be added that by *proofs* he means, first, disproofs of the mechanical or chemico-physical explanation of biological phenomena; and second, that a non-mechanical, unifying, and individualizing causality is at work in organisms. In a word, he means to prove that a general teleology is operative in organisms and that the question of the kind of purposiveness is to be left open.

A complete list of vitalists and biological teleologists would include such other names as Henri Bergson, J. Arthur Thomson, J. S. Haldane, and William Patten. A summarized statement of the views of each of them follows.

2. **The arguments of Bergson.**—A non-mechanical interpretation of organisms is defended by Bergson in the following considerations: (*a*) that minute variations must sometimes increase and persist a long time before they are useful to the organism in its struggle for existence; (*b*) that instincts are marks of unconscious purposiveness; and

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[11] See "Creative Evolution" (translated by Arthur Mitchell), p. 65. (Henry Holt and Co., 1911.)

(*c*) that we are still far from compounding protoplasm chemically. (*d*) Bergson grants that vitality is tangent to physical and chemical forces at every point; but just as every point on a straight line may be an integral element of a circle, so a physico-chemical explanation of an organism may be true without being either the whole truth or even the most significant truth. "In reality," he says, "life is no more made up of physico-chemical elements than a curve is composed of straight lines."[12]

Bergson argues that biological scientists find traces of an effective psychological activity in the humblest manifestations of life. Even in the motions of the amoeba, to say nothing of the behavior of infusoria, the chemico-physical explanation breaks down. Physics and chemistry will never give us the key to life. The life process, to Bergson, is *continuous;* its parts are not completely separable or commensurable. It is, therefore, different from a purely mechanical process in that it is irreversible and unpredictable. The physical sciences, capable as they are of dealing with the repeatable aspect of things, cannot grasp a process which is irrepeatable.[13]

3. **The arguments of Thomson.**—In his work on "Evolution," J. Arthur Thomson expresses regret that the vitalist has not succeeded in making himself and his nomenclature intelligible, and on this account has left himself open to the charge of being vague and mystical. Yet, he says, the movement of vitalism has his sympathy. It has affected his evolutionism to the extent that he feels forced to recognize "the persistence of some originative impetus within the organism, which expresses itself in variation and mutation, and in all kinds of creative effort and endeavor."[14]

In agreement with Bergson he grants that the secret of life is baffling to human intelligence and that such nature poets as Wordsworth, Emerson, and Meredith, with their sympathy and intuition, may come closer to understanding life than the professional biologists. Thomson therefore contends that new and non-mechanical concepts are needed, such concepts, he says, as will take account "of the organism as an historical being, a genuine agent, a concrete individuality which has traded with time and has enregistered within itself past experiences and experiments and has its conative bow bent toward the future."[15]

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[12] "Creative Evolution," p. 31.

[13] *Ibid.*, pp. 31–38.

[14] Geddes and Thomson, "Evolution," p. 202; also pp. 201–211. (Henry Holt and Co., 1911.)

4. **The arguments of Haldane.**—The eminent English physiologist, J. S. Haldane, writing under the head of "The Fate of Mechanistic Biology," speaks of the mechanistic theory of life as bankrupt. The physico-chemical theory of life seems to have some meaning for superficial details, but when we pass to fundamental physiological problems, such as reproduction, the theory, he holds, is worthless. Current physiological literature continues to use the old terminology as a matter of custom. It cannot turn back to vitalism, for vitalism as traditionally understood, is equally sterile as a scientific concept. Haldane therefore contends that biology is an independent science, a science which deals not with chemico-physical mechanisms merely, but with "organic coördination." In organisms structure and activity cannot be separated; nor can living structure and the encircling environment, without impairment of normal function. With inorganic things these conditions do not hold. Thus there is a *wholeness* about the parts of an organism and the complete structure which escapes quantitative analysis and computation. Moreover, there is something organic about the relation of the entire living thing and its environment. Haldane therefore rejects the mechanistic account of life and prefers, with Thomson, to take the view of synthetic vitalism or "organicism."[16]

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[15] Article "Life and Death" in Hastings' "Encyclopædia of Religion and Ethics," Vol. VIII, p. 8. (Charles Scribner's Sons.)

[16] See J. S. Haldane, "The Sciences and Philosophy," Gifford Lectures, 1927–1928, esp. Lects. III–V (Doubleday, Doran and Co., 1929); also his "Mechanism, Life and Personality" (E. P. Dutton and Co., 1923).

In his "Holism and Evolution," the Hon. J. C. Smuts reasons to a conclusion similar to that of Dr. Haldane. Smuts holds that there is mechanism everywhere in nature and "holism" everywhere, but that as we ascend from matter upward in the course of evolution, "holism" increases and mechanism decreases. By *holism* Smuts means non-mechanical, organizing, synthesizing and creative activity which operates as a true cause. This holistic principle exists on every level of being—matter, life, mind, and personality—and manifests itself in the interdependence of whole and part. It exists in matter, it exists in greater degree in organisms, it is still greater in mind which expresses itself in truth, goodness, and beauty. Smuts grants that there may be gaps or "mutations" in the serial process of evolution. Yet the new physics, he believes, brings matter very close to the concept of life and makes the theory of "mutations" less probable.

5. **The arguments of Patten.**—In the preceding chapter William Patten's theory of cosmic evolution was sketched. It was there indicated that he regards evolution as serial creation. He also speaks of the separate acts of nature as forming "one continuous creative process" which, flowing out of an unlimited past through the present, bids fair to extend into a limitless future. From this it may be inferred that matter, life and mind are levels of existence attained in the one continuous cosmic process. The quality and degree of coöperativeness, order, unity, and freedom under discipline, is what distinguishes one plane of being from another. Since new properties and qualities appear as the scale of beings ascends from matter, through life to mind and human society, Patten contends that the higher is not to be explained in terms of the lower.[17] Patten argues against any special kind of creation in nature, but he firmly holds that the continuous evolutionary process produces beings with peculiarly significant qualities.

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[17] See William Patten, "The Grand Strategy of Evolution," pp. 28–42. (Richard G. Badger, 1920.)

C. Critical Estimate of the Debate between Mechanism and Vitalism

It should be frankly acknowledged that the problem here under discussion is one primarily for specialists in the field of biology. Yet, since the biologist is dealing with subject matter of very vital concern to all the social sciences, as well as to philosophy, the following considerations appear pertinent:

1. In the final analysis, the controversy resolves itself into the question, whether the organization characteristic of living things, whether the activities and processes of internal and external adjustment in organisms, are explicable in chemico-physical terms. Let it be granted that the problem is one primarily for specialists in the sciences in question. At any rate an impartial observer can appreciate that both mechanism and vitalism represent and stand for a truth, though perhaps partial. The thoroughgoing mechanist maintains that the chemistry and physics of organisms is the same as that of non-living substance, except that that of the former is more subtle, complex, or refined. The vitalist, on the other hand, holds that organisms exhibit properties, qualities, and types of behavior only inadequately described by chemistry and physics.

2. The fact that these two schools of thought in biology have not come together after two thousand years of investigation and debate suggests the probability of truth in both views. Unless an entirely new explanatory hypothesis is proposed—and none is in sight—doubtless that hypothesis will triumph which most effectively takes account of the truth embodied in both of these theories. Such a view is hinted by Dr. Haldane when he says: "What is the cause of the helpless position in which biology finds herself? The mechanistic hypothesis has been the only one of the two which seemed inherently capable of helping us positively in the details of biological investigation; and yet this hy-

pothesis is unmistakably a failure in relation to biological investigation as a whole; and the vitalistic theory, if one can call it a theory, is only a way of registering this failure, and does not help us to a real understanding.''[18]

3. There is, however, a formal or purely logical aspect to the problem of mechanism *versus* vitalism that should not be overlooked. Are the working concepts or categories of the physical sciences to be given priority to those of the biological, psychological, and social sciences? If so, on what ground? Can this question be resolved by the representatives of a particular science, who approach their materials with selected aims, tools, and working principles? To do so seems to us to be the sheerest dogmatism. When biology, or any other single science presumes to decide how nature as a whole is to be explained, at that moment it ceases to be a science and becomes a philosophy. We should contend that only in the light of a philosophy of the sciences, a study involving a logical criticism of the concepts and categories of the sciences, can the debate be ended. Some scientists seem not to have heard of Hume and Kant, or if they have, they have ignored them. It may be noted that Driesch, Bergson, and Haldane at least recognize this claim upon them, for all regard biology as an independent science.[19]

4. The vitalist may and does believe that vital processes involve specific chemico-physical activities in one-one correspondence with the vital. He may also grant (not all do) that there is a predictable aspect to life phenomena, as, for example, in human, animal, and plant behavior. The chemico-physical treatment of organisms is, therefore, logically relevant, scientifically sound, and practically useful. The mathematical and statistical treatment of individual and collective human life, as carried on in economics and sociology, is also logically defensible and useful. All this

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[18] ''Mechanism, Life and Personality,'' p. 64. (By permission of E. P. Dutton Co.) See also his criticism of the mechanistic theory in Lecture II.

[19] See J. S. Haldane, ''The Sciences and Philosophy,'' Lecture V.

may be granted. But it does not follow that what can be observed and known from a limited purpose and with selected intellectual tools is adequate to all aspects and phases of living things. This is the contention of the vitalist who invents biological and psychological concepts to describe new and higher types of activity than those observed in inanimate things. When and where the *quantitative* concepts of the physical sciences fall short, the scientist may resort to the use of concepts with a *qualitative* connotation, and the burden of proof rests with the mechanist to show why this is not permissible. It is true that scientific method enjoins the practice of simplicity and adherence to the law of parsimony, but it is equally urgent of respect for the facts. Life does seem to be swallowed up in matter, but in view of its apparent directive and selective control over matter, transforming physical energy in its own interests, it does not appear that life is mere matter. In organisms matter seems to be possessed and controlled by life.

5. There are two points on which the vitalist needs to exercise caution: (*a*) He needs to be careful lest he appear to be defending a doctrine of chance, in the sense of uncaused occurrence in the organic realm. Nor can he as a scientist hold that there is a non-discoverable and hence indeterminable agency at work which miraculously interposes itself in the orderly chemico-physical process of the bodily machine. Given two systems, whether organic or inorganic, identical in every respect and surrounded with identical conditions, we should expect the same results. (*b*) In the second place, the terms used by vitalists, such as "entelechy" (Aristotle), "psychoid" (Driesch), "vital impulse" (Bergson), "originative impulse" (Geddes and Thomson), and "soul" (McDougall), terms which stand for "something" non-physical, are in danger of being unscientific through their use of a vague or mystical, to say nothing of an unverifiable, hypothesis. The vitalist, it is true, is under no responsibility to define this "something"

in chemico-physical terms, for by hypothesis it is non-physical; but as a scientist he may be asked to define clearly and precisely what he means by his basic concept.

6. Again, it should be observed that the debate over mechanism and vitalism in biology is crucial for metaphysics or theory of reality. If the mechanists should establish their case, a monistic materialism as a world view would seem to follow logically. The inseparableness of life processes from the phenomena of mind, as will be made clear later, requires this conclusion. If the vitalist establishes his case for the existence of a non-physical or teleological element in vital processes, then the way is open to a theory of reality, whether monistic, dualistic, or pluralistic, which makes room logically for mind as a distinct reality.

III. The Relations of Matter, Life, and Mind

In closing this study of evolution and life, it may be well to consider a brief and summary statement of the relationship of life, mind, and matter. This will serve to gather into a single perspective what has already been said about matter in Chapter IX, about life in the present chapter, and it will prepare the way for what is to be said about mind in Part IV.

Any theory or philosophy of evolution which attempts to deal with the world as a whole (cosmic evolution) is forced to treat the problem of the relationship of these three outstanding realities of common experience. Let us notice briefly a few typical philosophies of evolution (cosmologies) on this grand scale:

A. The Solutions of Various Evolutionary Theories

1. **Creative evolution.**—Perhaps few men of note to-day would defend the preformation or unfoldment theory of evolution. It is true that the English biologist, Bateson,

a few years ago, surprised his fellow biologists with the statement of such a theory as applied to the relationship of man, animals, and the single-celled amoeba. The higher and more complex organisms, he held, evolve from the lower and simpler by a process of unfoldment of what was contained in them potentially. This view, however, has given way generally to some form of creative or emergent evolution. For purposes of illustration, we shall refer at length to Henri Bergson's "Creative Evolution."

Bergson resolves the puzzle of the nature of reality and the cosmic evolutionary process by an examination of "the existence of which we are most assured and which we know best" (p. 1), namely, our own, or the reality of our own consciousness. If we would know what exists and what its nature is, we must examine "this privileged case." What is true of it, is true of the whole. Consciousness, therefore, when extended as an explanatory principle to the totality of the cosmic process, becomes in Bergson's language, "life," "mind," "the vital impulse" (*l'élan vital*), "duration."

Now what are the characteristics of consciousness? How is life related to mind? and what is matter? The fundamental trait of consciousness is change—unceasing change. It has the nature of time or duration. "My mental state," he says, "as it advances on the road of time, is continually swelling with the duration which it accumulates; it goes on increasing—rolling upon itself, as a snowball on the snow." We change without ceasing and the mental state itself is nothing but change. Mind is characterized by absolute continuity; discontinuity is apparent only because of the fixation of attention upon items in the stream. "Duration is the continuous progress of the past which gnaws into the future and which swells as it advances."[20]

Because consciousness is change, no previous state being identical with a following state, it is irreversible. Now this consciousness or mind, when organic existences in general are being treated, is called *life*. Life as an organic and dynamic principle is referred to as an ''original impetus.'' Bergson rejects both mechanism and finalism (the view that everything works out according to a preconceived plan) and holds that the creative process has an element of contingency, choice, or spontaneity in it which makes the outcome unpredictable. Life, in its essence, is a *tendency,* which grows and unfolds like a sheaf, dividing and creating as it goes, and manifesting itself in three main types of activity, namely: vegetative torpor in plants; instinct in the animals; intelligence and, to some extent, intuition in man. Bergson likens this creativity of life to a shell, which suddenly bursts into fragments, which fragments, being themselves shells, burst in their turn into fragments destined to burst again, and so on for a time incommensurably long.[21]

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[20] *Op. cit.*, pp. 2, 4.

As to the origin of matter and its relation to life, Bergson is not entirely unambiguous. When he is describing the ceaseless creativity of life, he suggests that the origin of individuals and species is due in part to the resistance life meets from inert matter. From this point of view, matter is aboriginal; it is something which life faces as an obstacle, into which it insinuates itself and which it tries to overcome or bend to its purposes. At other times, Bergson refers to matter as an inversion of life, as though it were a by-product of the life process—life unmaking itself. ''In this image of a *creative action which unmakes itself,* we have already a more exact representation of matter.''[22] The former view implies a dualistic theory of reality; mind or life and matter are coeval. The latter theory implies the primacy of life, and the subsequent (ideally and logically viewed) appearance of matter. These two views are never brought together unless he means to teach that reality is a moving flux of opposing tendencies, the one which becomes the varied realm of living things, and the other which becomes, or tends to become, the realm of inert matter.

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[21] *Op. cit.,* pp. 87, 98.

[22] *Ibid.,* pp. 247–248.

2. **Emergent evolution.**—The term *emergent evolution* is applicable to three more or less varying philosophies of cosmic evolution, namely, C. Lloyd Morgan's "Emergent Evolution" (1923) and "Life, Mind, and Spirit" (1925); Samuel Alexander's "Space, Time, and Deity" (2nd ed., 1928); and R. W. Sellars' "Evolutionary Naturalism" (1922).

While all three of these philosophies openly take their stand on *naturalism,* it may be well to treat the views of Morgan and Alexander together, leaving Sellars to be treated in a comparative way later. "Emergent Evolution" lays stress upon the incoming of the new, exemplified in the physical world by the advent of new elements, and in the organic, by the appearance in succession of life, mind, reflective thought, and values. The inorganic and the organic "belong to one tissue of events"; they "exemplify one foundational plan." There is continuity between the lower levels of being and the higher levels, broken only by the emergence of qualitatively new entities. Thus there is also discontinuity.

Morgan employs the figure of a triangle with horizontal lines drawn across it to elucidate both his own view and that of Alexander. The triangle stands for the universe, and the horizontal lines, giving the appearance of a ladder, indicate the levels of evolutionary advancement. At the base of the triangle is space-time or point-instants (motion)—a mathematico-physical conception of matter—which is the matrix and raw material of the creative process. Out of this raw stuff there emerge first the chemical elements or molecules and atoms of matter, then plants (which have no mind), then animals (which possess consciousness), then man (with powers of reflective consciousness), and lastly God. Each new thing in the ascending scale of entities emerges, not as the result of a physicochemical process, mechanically conceived, nor as the mere regrouping or summation of elements already existent, but by what Morgan calls ''extrinsic and intrinsic relatedness.'' Through these new types of ''effective relatedness'' new qualities emerge (they are not resultants), and in consequence, new entities appear on different levels or planes of being. In this view, then, each new emergent plane of existence is a product and a prophecy, though not in the sense that absolute prediction can be made or that the higher can be interpreted in terms of the lower. This means ''that life cannot be interpreted in terms of physico-chemical relatedness only; that human affairs, which depend upon the quality of mind, require something more than biological interpretation; and that conduct when deity is emergent depends for its guidance, in the naturalistic sense, on that which is expressed by this richest of qualities.''[23]

Now just how does Morgan's view differ from Alexander's? (*a*) In the first place, space-time for Alexander is a level antecedent to physical events or matter. Morgan says that he seeks in vain for spatio-relatedness, antecedent to, or apart from, physical events. (*b*) Morgan, Spinoza-like, acknowledges a divine activity to be at work at the base of the pyramidal hierarchy of existence, ''omnipresent and manifested in every one of the multitudinous entities within the pyramid.''[24] This activity is what he means by *spirit*—something distinguished from *life* and *mind;* ''It is that of which *all* qualities, from lowest to highest, are manifestations under the conditions of 'Time and Space.' ''[25] For Alexander, Deity is an emergent quality, always emerging but never fully emergent. (*c*) Since mind, life, and matter, being on different levels, are heterogeneous, how, asks Morgan, without postulating activity—the nisus to the higher—can one emerge from the other? (*d*) Lastly, it is to be remembered that Alexander is a realist in metaphysics, while Morgan is a disciple of Spinoza. Naturally, therefore, Morgan wonders how, on Alexander's view of reality, mind as an emergent quality can know, for example, a quartz-crystal, which is on a lower level. ''How can the mental as a quality of the one, apprehend the non-mental by which the other is qualified in accordance with its lower evolutionary status?''[26]

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[23] C. Lloyd Morgan, ''Emergent Evolution,'' p. 204. (Henry Holt and Co.)
[24] *Ibid.*, p. 13.
[25] ''Life, Mind, and Spirit,'' p. 1. (Henry Holt and Co., 1925.)

How, now, does Sellars' ''evolutionary naturalism'' relate itself to the emergent evolution of Morgan and Alexander? (*a*) In the matter of openly accepting a naturalistic explanation of the different levels of existence, Professor Sellars is in complete accord. While holding ''that there are levels of causality in nature and that new properties and capacities arise with novel integrations,''[27] and while granting ''the relative autonomy of the sciences and their logical discontinuity,'' he still inclines to the view that a physico-chemical approach to all levels of being, provided it is sufficiently refined, will unravel all the secrets. Sellars rejects the cruder forms of mechanism as too inelastic for biology and suggests that life processes be regarded as analogous to the subtleties of synthetic chemistry. A *temporal* process of integration and organization of matter is sufficient to explain the qualitative novelty in life and mind.

(*b*) In the matter of Deity, which in Morgan's view pervades the whole cosmos, and in Alexander's is an emergent quality, Sellars is in fundamental disagreement. He finds no need of the God idea. To him it is something unscientific and hence unphilosophical. At any rate the whole historical train of God ideas is either a vestige of primitive ignorance or a plain anthropomorphism. In a thoroughly naturalistic explanation of nature, including the human order, he insists room may be found for a defensible theory of values without the God concept.[28] (*c*) On theory of knowledge, a problem which involves the relationship of mind to the lower levels of existence—for example, life and matter—Sellars' position would be closer to Alexander's than to Morgan's. When dealing with the knowledge problem, he tends to treat mind as a physical category in ultra-behavioristic fashion. "I have tried to show," he says, "that the psychical is of the very texture of the functioning brain." The unique and independent character of the mind is here tentatively slighted, if not forgotten, and mental events are treated as nervous processes. "If then, we use mind as a physical category, we should mean by it the nervous processes which find expression in intelligent conduct. The mind is the brain as known in its functioning. It is the brain in its integrative processes."[29]

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[26] ''Emergent Evolution,'' p. 12.

[27] ''Evolutionary Naturalism,'' p. 322. (Open Court Publishing Co., 1922.)

[28] See ''Principles and Problems of Philosophy,'' Chs. XXVII, XXIX, and XXX. (The Macmillan Co., 1926.)

The cosmologies of Bergson, Morgan, and Alexander are representative of the philosophical attempts to construct views of the world in which matter, life, and mind are considered in their relationship. The literature of contemporary philosophy offers other attempts similar in principle, though different in details and in terminology. Among them are William Patten's "The Grand Strategy of Evolution," referred to at length in the preceding chapter; Edmund Noble's "Purposive Evolution"; and the Hon. J. C. Smuts' "Holism and Evolution." Of these authors, Patten and Smuts particularly make special effort to trace out, in the light of the sciences, the intimate connections between matter, life, and mind. Both lay stress upon the fact that there is *real creativeness,* as distinct from a mere combination of preëxisting elements, in evolution as the process advances from matter through life to mind. The concepts of physical science, though adequate on the plane of matter, must be supplemented, they hold, by concepts drawn from an empirical account of life and mind, when the higher planes are reached. Evolution, therefore, is a process which is irreversible and irrepeatable.

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[29] "Evolutionary Naturalism," pp. 322, 319, 300; see also, by the same author, "The Principles and Problems of Philosophy," Ch. XXIV.

3. **Repetitive evolution.**—Opposed to the views of creative or emergent evolution stands a theory, now quite out of vogue, which may be called a repetitive theory of evolution. On this view nothing really ''new'' appears in the unfolding of the cosmic processes; every apparent novelty and individuality is explicable in terms of a redistribution, with increasing complexity, of the original elements of matter. Matter, life, and mind are indeed levels of ascending order, but there is only one type of causality, namely, the mechanical, and *living* things are only more complex syntheses of the elements of matter, while mind is only a different and more complex manifestation of life. This theory of evolution, rather widely accepted in the seventeenth and eighteenth centuries, has little acceptance in this day when physics and chemistry are keenly aware of the subtle organization and character of matter. Yet it is just such a view as this that is implied in Loeb's mechanistic biology and his own extension of that view into cosmology. It is a view into which many emergent theories tend to lapse through overmuch adherence to the working concepts of physics and chemistry. Both Alexander and Sellars struggle to evade this type of evolutionary theory, but it is an open question as to whether they really escape it.

B. Suggestions for a Constructive View

It is clear at once that there are two main types of evolutionary philosophy: the creative or emergent, and the mechanistic or repetitive. The theories of Morgan, Alexander, Bergson, Smuts, and Sellars are serious attempts to reconcile or solve the age-old conflict between mechanism and vitalism. They have introduced into philosophy, particularly that part called cosmology, a new vocabulary drawn from the recent developments in biology, chemistry, and physics. All creative evolutionists recognize, under different descriptive names, an organizing and directing principle within nature from the beginning. In some of these cosmologies, life and mind are explained as the result of the gradual ''stepping up'' of matter into higher and higher forms of organization and synthesis. Some of these cosmologies (Alexander's and Sellars', for example) are not prepared to admit gaps or ''mutations''; others (Bergson's and Smuts', for example) are willing to admit a considerable degree of spontaneity and unpredictableness, and hence ''mutations,'' in the course of evolution. Such gaps or discontinuities may be recognized between matter and life, and between life and mind. Those who admit no discontinuities come very close to, if they do not actually adopt, a mechanistic or repetitive theory of evolution.

The crucial problem is how to explain and interpret the phenomena of life and mind. Two types of theory, therefore, appear open to us: one of them is mechanism, which means materialism in theory of reality, and the other is creative evolution. The former theory implies that matter with its empirical qualities is transformed into the empirical qualities of life, and life, in turn, into the qualities of mind. Such a theory involves all of the weaknesses of a repetitive theory of evolution. It asks us to believe that matter, as described by the physicist, by its own inherent power (is it a miracle?) lifts itself to the scale of life and mind. The latter theory implies that matter, life, and mind are levels in an ascending scale of creative evolution, an evolution which is generated and sustained by an immanent creative and directive principle. Such a theory allows for possible gaps or ''mutations.'' It is this latter view that seems to be implied in the biological theory of Driesch, Bergson, Haldane, and Thomson, and it is the standpoint which is further developed and defended in the chapters which follow.

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Chapter XII

THE PROBLEM OF COSMICAL MECHANISM AND TELEOLOGY

OUR DISCUSSION of the origin and nature of life in the preceding chapter led us into the controversy over mechanism and vitalism. As was pointed out, the settlement of that question has an important bearing upon philosophy. Here we are to ask: *Is the world as a whole to be interpreted in terms of mechanism or in terms of purpose? Or, are we to conclude that the world is both mechanical and purposive?* Or, again, are we to say with the followers of Vaihinger's "as if" philosophy that both explanations are false, the terms being useful fictions in organizing experience, but not objectively true? No problem in philosophy is of more importance than this one. The view taken here determines largely what solution shall be given to other questions.

I. Definition of the Issue between the Two Standpoints

It may be well at the outset to examine briefly the meaning of the terms *mechanism* and *teleology.* The meanings of the words, if not the words themselves, have a history reaching back to the ancient Greeks. Naturally we should not expect all writers in science and philosophy through the centuries to use the words in exactly the same sense, or that the words when used always have clear-cut meanings.

A. Meaning of the Terms

The word *mechanism* when applied to the world as a whole means that the universe is a huge though intricate machine—like a printing press, an automobile, or an adding machine, only far more complicated in the minute adjustment of its parts. The whole world, including man and civilization, is to be understood in terms of material particles in motion. Every occurrence in nature, whether the falling of a stone, the erosion of a continent, the formation of a cloud, the growth of a flower, the life history of an animal, the conduct of a man—every occurrence takes place in a rigorously determined, blindly operating, network of physically related elements. Mechanism in science represents the motive of exact prediction and control. Once we have found and measured the antecedent physical conditions of an event, object, or process in nature, an adequate account of it is in hand. Physics and chemistry are the sciences of ultimate explanation; the other physical sciences, psychology, biology, and the social sciences are dependent on, if not branches of, these two sciences.

Mechanism thus denies: (1) that the world either in part or in whole is a goal- or end-realizing process; (2) that the living and creative processes in nature are grounded and sustained in God; (3) that mind, whether in animal or man, operates as a *true cause* in the order of living things; (4) that life processes in plants, animals, and man differ in any way other than in the degree of their subtlety and refinement. In a word, mechanism reduces all realities in nature, whether physical, vital, or mental, to modes of the behavior of matter. Thus, in terms of the electronic theory of matter, everything turns out to be a problem of calculating the geometrical patterns of motions due to the attractions and repulsions of electrically charged points.

The word *teleology* is made up of two Greek words, τέλος, *end,* and λόγος, *word* or *discourse.* Though the meaning of the word is as old as the ancient Greeks, the word was devised by Christian Wolff in 1728 to designate that branch of natural philosophy which had to do with ends or *final causes* as distinguished from *efficient causes.* By *final cause* was meant that for the sake of which an event takes place; it was the purpose or end of the process. By *efficient cause* was meant the agency or conditions which are antecedent to and which produce the event. Accordingly, we say that a student goes to college to secure an education (final cause); and the falling brick injured a workman (efficient cause). Both terms, however, have been used with slightly varying meanings. Teleology, in a cosmic sense, is thus a science of ends, devoted to finding out the purpose or purposes which are being realized in the world. To say that the world in part or in whole is an end-realizing process means to reject mechanism as a final view and to put in its place an organismal conception. That is, the universe is thought of, not as a multiplicity of juxtaposed parts merely, but rather that the parts, as qualitatively diverse elements, together constitute in some sense an organic whole realizing a goal (or, perhaps, goals).

Just as *mechanism* derives its meaning from the nature of a machine, so *teleology* takes its meaning from the structure and activity of a living organism. Teleology would therefore affirm the four points denied by mechanism in the paragraph above. Moreover, it would deny that everything in the experienced world is reducible to the materials of chemistry and physics. The activities of life and mind, especially the unique qualitative characteristics manifest in their diverse forms, the teleologist holds, cannot be explained fully in terms of the strains and stresses of physical energy. Teleologists in most, if not all, instances grant the presence of mechanism in nature. Obviously things which have an orderly structure—for example, a poem, a score of music, a flower, a human being—embody mechanism. But the teleologist will subordinate the principle of mechanism to the principle of purpose in his final view.

B. How the Conflict Arises

In the ordinary affairs of life *purpose* is everywhere taken for granted. If one buys a coat, eats a meal, cultivates a garden, cares for animals, reads a book, builds a factory, goes to college, or votes at an election, it is to realize an end. Ask an automobile mechanic to explain the parts of a machine and although he may mention the kinds of metal, the weight, and structure, in the end his explanation will be in terms of function or use. Take the parts of an animal organism—the skin, hair, nails, bones, nerves, blood, muscles, and glands; each has its purpose or use. Look at the institutions of society—the family, the school, the church, the state; each has a separate end to accomplish. Whether child, youth, or adult, we are always asking about things: what is this for? We find it easy and useful to think and speak in terms of teleology.

When primitive man began to wonder about the things of nature, especially the reason for change, he hit upon teleology. This fact has perhaps put teleology at a disadvantage. Beliefs in animism, magic, fetishism, and so forth, ideas bound up with primitive man's crude teleology, tend to discredit teleology for the physical sciences in modern times, even though the later teleology is very different from the primitive. It is true that the physical sciences were not able to get under way until spirits and demons, with their capricious will, were banished from material objects. The social sciences also had to await the appearance of a saner view of human nature. Despite the modest origins of the purposive principle of explanation, it is still employed, though in refined form, in history, politics, sociology, economics, law, general literature, music, religion, and morals. Social studies have not been able to dispense with teleological ways of speaking. Just allowance having been made for such physical conditions as soil, climate, topography, and food, students of social problems still find it necessary to reckon with man as a living, desiring, thinking, and planning creature. So long as man is regarded as achieving in some degree the power of self-direction and freedom, and hence the ability to overcome obstacles, to shape and control his own life and that of society by reflective thought, just so long will social scientists employ teleological concepts in their work.

On the other hand the physical sciences—astronomy, physics, chemistry, geology—have since 1600 discarded teleological principles for the mechanical. The biological sciences and even psychology—particularly, the behavioristic school—have now accepted mechanism as a point of view for explaining the phenomena with which they deal. Some scientists in each of these fields assume mechanism only as a principle of method. They would not wish to be understood as proposing a principle of explanation and interpretation for the whole world. However, there are many who insist that mechanism is to be employed not only as a methodological principle in particular fields, but its utility and success there, they hold, warrants its extension to the cosmos. In consequence, we have a mechanistic world view grounded in the claims of the physical sciences.

In a word, then, the issue stands thus: the problem of mechanism *versus* teleology results from man's attempt to explain and interpret the world. Those sciences which deal with physical things look to chemistry and physics aided by mathematics for the last word on the nature of things. These sciences are quantitative and mechanistic, and from them comes the suggestion that we view the world as a refined mechanism. The social sciences, general literature and common sense employ purposive concepts in explaining human activity both individual and collective. The whole human order seems to be a realm of ends in which values of all kinds hold the center of interest. Here quantitative considerations are subordinated to qualitative matters, and teleology is suggested as a principle for interpreting the world. Mechanism as an explanatory idea implies that, *given,* in exact and complete quantitative description, all the forces and factors at work in the world in 1500, the whole history of Western civilization from that date to the present moment could have been predicted. Not a single invention, no artistic or scientific production, no moral, political, or religious occurrence, could have escaped exact prediction. Teleology implies that there is more in the world than calculable quantitative elements. Moreover, mechanism is regarded as the more inadequate, as evolution, creativity, and organicism are ascribed to the world as a whole.

Scientists in their later years sometimes turn to writing philosophy, not infrequently offering theories of reality. Those who come to philosophy from the physical sciences either as researchers, teachers, or students often carry over the special interest, point of view, and method of their specialty, without seriously asking whether what is true of the part is also true of the whole. A scientific training is an excellent preparation for work in philosophy. There is none better. Yet philosophy calls for the ability to take account of and appreciate many kinds of facts and many types of phenomena.

Where shall philosophy look for the best clue to the nature of the whole—to the realm of the physical or to the realm of the human and mental? Perhaps both mechanism and teleology are in some sense true.

C. Bearing of the Controversy

What difference does it make whether we employ mechanism or teleology as a world view? First and foremost, it is a question of truth or falsity. Can all the facts of experience, can the phenomena of life, can consciousness, with its content of interest, purpose, and value, be adequately explained in quantitative and mechanistic terms? There are scientists from every field, as well as philosophers, who hold that they cannot. There are scientists and philosophers who hold that they can be so explained.

Second, we must ask what will be the effect of the acceptance of either view upon human life? This question may be asked, since neither mechanism nor teleology is wholly demonstrable. If mechanism is accepted as in itself adequate, then it follows that man is not free and his life of purpose, planning, and aspiring is only a dream and an illusion. It follows that one of the most universal and persistent phases of human experiences—namely, the moral—is a hoax and a deception; moreover, the esthetic, religious, and all truth values take on a shadowy existence. Is it possible that these experiences which the masses of common as well as cultured people take so seriously and hold so dearly, experiences for which they live and die—is it possible that these convey no facts about the nature of the world and give no clue to the structure of the whole? Viewed in the light of workableness in human experience, shall we accept mechanism or teleology as the more inclusive view?

D. The Method of Reasoning Involved

As suggested above, both mechanism and teleology rest largely on reasoning by analogy. An argument by analogy, as we have seen, runs thus: two things or groups of things are similar in certain observable respects; therefore they must resemble each other in other and unobserved respects. In the words of J. S. Mill: "Two things resemble each other in one or more respects; a certain proposition is true of one; therefore it is true of the other."[1] Those who hold that Mars probably is inhabited reason that because Mars is like the Earth in certain observed respects, it must be like the Earth in respect to habitation. In like manner it might be argued that the eye and a watch are alike in principle and differ only in the complexity of structure and function. The mechanist in philosophy reasons that since not only material things but even living things are explained in certain important respects by chemistry and physics with the aid of mathematics, then in all other respects they can be so explained. The teleologist, on the other hand, taking his cue from the existence of purpose in man and in social activities, and from what he believes to be purpose in animals and plants, infers that the same must be true in the inorganic world. The mechanist thus gives a reading of the *whole* in terms of what he thinks he finds in the lower (matter), while the teleologist gives a reading in terms of what he thinks he finds in the higher (organisms). The biological and psychological sciences still employ both mechanistic and teleological concepts. Some social sciences find mechanistic concepts and methods useful for certain purposes.

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[1] "System of Logic," Book III, Ch. XX, par. 2. (Longmans, Green and Co., 1884.)

The history of science shows that analogies may sometimes be misleading. Things may be similar in certain respects, even in fundamental respects, yet they may differ in equally fundamental respects. Moreover, similarities are often superficial, and surface resemblances may be mistaken for deep and important ones. Analogy, therefore, must be controlled and guided by cautious analysis and synthesis. Analogy is a fruitful source of suggestion, but these suggestions must be tested by deeper study.

II. The Case for Mechanism in Universal Reality

A. The History of Cosmical Mechanism

Typical examples of a mechanistic theory of both parts and the whole of nature have already been cited in the preceding chapters. Here only the barest sketch will be given to show that mechanism has an almost continuous history from the ancient Greeks to the present.

1. **Mechanism for the ancient thinkers.**—Mechanism in the ancient world, and until about 500 A.D., found its chief

expression and model in the atomism of Democritus. All existence for Democritus consisted of atoms in mechanical interrelationship and the void. Everything in nature offered a problem in mechanics; such objects as plants, animals, and man, though made up of a finer grade of atoms, differed from ordinary matter quantitatively and not qualitatively. Atomism was accepted by Strato, a leader in the Lyceum; by Epicurus, the founder of the Epicurean school of morals; and by Lucretius, the Roman poet. During the Middle Ages, because of social conditions and the quiescent state of the inductive studies of nature, mechanism was almost without advocates except in Persia. Omar Khayyám (1050–1125), the astronomer-poet of Persia, in his *Rubáiyát* revives Epicureanism.

2. Mechanism in the first centuries of modern science.—With the beginning of modern science in the fifteenth, sixteenth and seventeenth centuries, mathematics was applied to the inductive studies of nature by such men as Copernicus, Galileo, Kepler, Newton, and Boyle, and mechanism was again accepted as a working hypothesis. Astronomy, physics, and mathematics were the dominant sciences. Physical scientists at the beginning of the modern period of thought accepted mechanism as a sound principle of explanation for all physical phenomena as they do to-day. However, to most of them, if not all, the mechanical aspect of nature was regarded as subordinated to the purposive will of God. The success of mechanism in the physical sciences suggested to men studying mental and social problems, as well as to philosophers, the possibility of its use in psychology, ethics, politics, biology, and metaphysics. Descartes, a mathematician and anatomist, taught that mechanism holds true of all material and living things in nature except man. He allowed that man's body, like the animal's, functions mechanically; only man's mind or soul is purposive. Spinoza, building his philosophy upon foundations laid by Descartes, went a step further and included man's mind within the scope of the mechanical. Hobbes also offered a complete philosophy based on mechanism. Consciousness, he explains, is motion in the brain.

3. **Mechanism in the eighteenth century.**—In the eighteenth century English and French scholars were working out a psychology and a social philosophy on a mechanistic basis. Elated over the achievements of the physical sciences, many investigators felt sure that a reconstruction of the social order was delayed by a failure to apply the same principles in the human realm. Thus, in England, David Hartley and Joseph Priestly explained thought as a secretion of the brain. In France, a similar defense of mechanism was made by Diderot, La Mettrie, d'Holbach, Condillac, Helvetius, and Cabanis. In this period the following apothegms were abroad: ''The brain secretes thought'' and ''The nerves make the man.''

4. **Mechanism in the nineteenth century.**—Nineteenth century mechanism had its ablest proponents in Germany, though England, France, and the United States were not without advocates. Such names as Vogt, Czolbe, Moleschott, Büchner, Feuerbach, and Haeckel were prominent in Germany. Although the theory which they offered had a strong mechanistic flavor, they were primarily protesting against a reactionary theology and an ultra-speculative philosophy, both of which were current in Europe. The mechanism of this century was more carefully grounded in the sciences, because biology and psychology, the youngest and most reluctant of the sciences, were at last given a mechanical cast. It is true that mechanism was rarely, if in a single case, consistently defended; nor were the *knowledge problems* involved in the theories ever clearly and fully grasped. Yet thought for the most part was conceived (*a*) as motion; (*b*) as the effect of motion; (*c*) as the necessary concomitant of motion; or (*d*) as one aspect of an underlying principle of which motion is a parallel expression. In England, Charles Darwin and Thomas Huxley, both biologists, gave considerable impetus to mechanism. Darwin's doctrine of *natural selection* as an

explanation of the origin of species displaced the theory of special creation with a naturalistic view and gave encouragement to mechanistic biology. Huxley's work in biology was also founded upon mechanism. Both of these scientists, however, were not disposed to extend their working concept of mechanism to the world as a whole.

Ernst Haeckel's ''Riddle of the Universe'' (1899) may be taken as a typical example of the German writings in defense of mechanism. In 1866, under the title ''Dysteleology,'' he had collected the facts from biology which he thought contradicted the notion of purpose in the arrangement of the parts of the living organism. Yet mechanism is not consistently advocated in ''The Riddle of the Universe,'' as the following quotations show: ''But the idea of design has a very great significance and application in the organic world. We do undeniably perceive a purpose in the structure and in the life of an organism. The plant and the animal seem to be controlled by a definite design in the combination of their several parts, just as clearly as we see in the machines which man invents and constructs . . .'' (p. 261). Then compare: ''Mechanism (in the Kantian sense) alone can give us a true explanation of natural phenomena, for it traces them to their real efficient causes, to blind and unconscious agencies, which are determined in their action only by the material constitution of the bodies we are investigating'' (p. 259). At the end of the book, in a section headed ''Conclusion,'' he says: ''We grant at once that the innermost character of nature is just as little understood by us as it was by Anaximander and Empedocles twenty-four hundred years ago, by Spinoza and Newton two hundred years ago, and by Kant and Goethe one hundred years ago. We must even grant that this essence of substance becomes more mysterious and enigmatic the deeper we penetrate into the knowledge of its attributes, matter and energy, and the more thoroughly we study its countless phenomenal forms and their evolution. We do not know the 'thing-in-itself' that lies behind these knowable phenomena'' (p. 380).[2] So speaks Haeckel, one of the greatest biologists of the nineteenth century, and reputed to be one of the ablest proponents of mechanism.

5. **Mechanism in recent theory.**—The mechanical theory of nature in the present century, except for the Heisenberg principle of indeterminancy in contemporary physics, remains almost where it was in the nineteenth. The recent advances in physics, chemistry, biology, and psychology have been outstanding, and philosophy is taking account of them, but the controversy is not laid. If recent developments in the sciences and philosophy have effected any change in view, it is that a crass mechanism must be abandoned and a more non-quantitative, non-mechanical theory accepted. We now know that the mechanical processes in nature are more subtle and refined than they were once thought to be, but in principle we have not been led beyond the views of the nineteenth century. The attempts by certain scientists and philosophers to reject both mechanism and teleology for a principle called ''emergence,'' ''creativity,'' ''integrative patterns,'' or ''organization'' are deserving of high praise as efforts to untie a Gordian knot. They are efforts to incorporate the meanings of both mechanism and teleology into a single new category which goes beyond either or both. Typical examples of such attempts will be given at the end of this chapter. Whether these new terms are merely new names for old meanings, or whether they actually stand for deeper insight and understanding, is a question upon which there is disagreement.

B. ARGUMENTS FOR MECHANISM IN THE WORLD AS A WHOLE

Let us now examine the evidences which are cited in defense of the mechanical theory of nature. The statements are brief and summary in character.

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[2] Quotations are taken, with permission, from the translation by Joseph McCabe, Harper & Brothers, 1901.

1. **Mechanism gives an adequate account of the physical order.**—Purpose and ends are irrelevant when explaining physical phenomena. Astronomy, physics, and chemistry, with the aid of mathematics and quantitative concepts, give us exact and verifiable knowledge. Control of physical processes and facility in predicting what will happen under given conditions, the two primary interests of science, have been increasingly realized by the rigid application of mechanism as an hypothesis. The success of mechanism in the physical realm warrants its extension as an explanation to the totality of things.

2. **Mechanism is adequate in the biological sciences.**—All biologists employ the mechanistic hypothesis to a greater or less extent, and some of them use it as the sole principle of explanation. Thoroughgoing mechanists hold that all the changes and activities of organisms, whether internal or outward, whether in respect to microbes, plants, animals, or man, may be understood in terms of the quantitative, chemico-physical laws of the physical sciences. No new materials and no new forces are discoverable; the processes differ only in the speed and refinement of their character. The views of Jacques Loeb as typical of mechanism in biology were set forth in Chapter XI; hence the argument need not be repeated here.

3. **Mechanism is adequate in psychology.**—Behavioristic psychology of the extreme type, for example, that of M. F. Meyer, John B. Watson, and A. P. Weiss, abandons the use of such terms as "consciousness," "mind," "soul," and "mental life." These ideas, according to Professor Watson, have their "origin in the general laziness of mankind." They are indefinable and hence useless concepts. The method employed by such psychologists as Wundt, James, Külpe, Titchener, Angell, Judd, and McDougall are regarded by behaviorists as introspective to a great extent. Only an objective method—that is, one which studies the *stimulus and response,* or movement of the organism, in measurable terms—can be regarded as scientific.

Psychology, like any science, is interested in prediction and control. For this reason its conclusions must be put in quantitative and verifiable form. Thoroughgoing behaviorism holds that psychology is a natural science, differing but slightly in fundamentals from physiology.

Professor Weiss also defines behaviorism as a study of human behavior or movement and contends that a behavioristic psychology is based on the assumptions of physics. When we attempt to indicate what shall be meant by movement, he insists that physics, chemistry, and mathematics are the sciences to be consulted. In his book, ''A Theoretical Basis of Human Behavior,'' he regards human behavior as a form of motion. Motion, time, space, rate, and energy are then discussed after the manner of physics.[3] In terms of this psychology, all thinking, feeling, willing, all loving, hating, fearing, grieving, all pleasure and pain, all contemplation of goodness, truth, and beauty are to be explained ultimately in terms of physiology, which in turn goes to physics for its explanatory concepts. Everything ultimately is *movement,* and movement is measurable.[4]

The reader will do well to remember that there are many standpoints in psychology to-day, and that extreme behaviorists constitute but a minority group. Some of the leading schools or types of psychology are: functional, structural, hormic, analytical, dynamic, configurational, Freudian, and self psychology. In Chapter XV the various psychological points of view, behavioristic and non-behavioristic, are further discussed. It is well to remember also that although behaviorism is sometimes represented as a new psychology, it is in fact very old. Among the ancients, the behavioristic view is expressed by Democritus and Epicurus; among modern English writers, by Thomas Hobbes, Joseph Priestley, and David Hartley; among French writers, by Diderot, Condillac, and Cabanis.

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[3] See *op. cit.,* esp. pp. 13, 14, 32, 70. (R. G. Adams and Co., 1925.)

[4] See John B. Watson, ''Behaviorism,'' esp. pp. 19 ff., 190 ff., 219 ff. (W. W. Norton and Co., Inc., 1925.)

Spinoza works out a systematic philosophy on the mechanistic hypothesis. Most psychologists recognize the utility of behaviorism as a method, but they do not agree with the behaviorists that other methods are unscientific. Professor Howard C. Warren's "Human Psychology" and R. S. Woodworth's "Psychology" are good examples of introductory texts which admit the utility of several methods.

4. **Mechanism is the only scientific hypothesis.**—Science aims to give an accurate descriptive account of nature in terms of cause and effect. Cause and effect are relative terms, and may be defined as invariable and necessary antecedent and consequent respectively. Science seeks to control nature's processes by first achieving the power of making sound predictions. Only when cause and effect are treated in a measurable—that is, quantitative—manner, is prediction possible. To grant the causal character of purpose is to admit an indeterministic or immeasurable factor. And this means that the world is irrational, hence unknowable and uncontrollable.

In this connection two additional considerations are sometimes advanced: (*a*) the concept of *natural law* in the sciences implies a quantitative and mechanistic point of view. If we are to believe that the inorganic and organic constitute one world in which law and order prevail, then mechanism must be accepted. Continuity and orderly sequence in nature, uniformity in the processes of nature—these presuppose mechanism.

(*b*) The *postulate of parsimony,* first stated by William of Occam (about 1300), and meaning that explanatory concepts are not to be multiplied beyond necessity, suggests a preference for mechanism. The concept of mechanism unifies the sciences and makes for simplicity. Since it is possible to explain the world in terms of one kind of energy or element—namely, material, an energy or element which takes many forms and enters into varied and subtle relationships—the law of parsimony suggests that it is better to do so.

III. The Case for Teleology in the Cosmos

A. The History of Cosmical Teleology

The teleological view of the world, like the mechanistic, has an almost continuous history in our civilization from the ancient Greeks to the present time. In the brief statement which follows, only typical examples of the stages in the history will be mentioned.

1. **Teleology for Greek thinkers.**—All the early Greek philosophies of nature, though naturalistic, were hylozoistic; that is, every part of nature, even the crudest bit of matter, was conceived to be animated or alive. Even the Democritean atom was alive. The first suggestion of a teleological view of nature, however, appears in the teaching of Anaxagoras (500–428 B.C.). Having affirmed that originally every part of nature was formed from infinitely small particles of matter (he calls them *germs* or *seeds*), mingled together and in chaos, he says the mind (νοῦς), a world-ordering spirit, imparted motion and brought order out of chaos. It may be doubted whether Anaxagoras uses *mind* or *intelligence* consistently, for he seems to employ mechanism as far as it will go in the solution of problems and then has recourse to mind. At any rate Socrates (in the "Phædo," 99) expresses a dissatisfaction with Anaxagoras' uncertain use of *mind*. Socrates himself inclined to a purposive view of nature in a manner not unlike what has been called the watchmaker's theory. Just as the maker of a watch builds order and purpose into the timepiece, so it is conceived that God (or Mind), being external to the world, puts order and purpose into it. William Paley (1747–1805) advocated this view in his "Natural Theology" in 1805.

The most carefully reasoned and systematic statement of a purposive world view to be found in ancient science or philosophy is advanced in the writings of Aristotle. His teacher, Plato, had prepared the way for it in his doctrine of ideas (patterns, types, or forms), which constitutes, in his thought, the living skeleton and dynamic principle of the universe. The *good* for Plato was the one comprehending cause and end of the cosmic process. Just as a large industrial concern with its many parts, with its organizations within organizations, is constituted and organized to realize profit, so Plato conceives of the world with its parts as constituted and working to achieve the *good.* Aristotle takes the somewhat mythical and figurative statement of Plato's theory and gives it a more scientific cast. For him nature is organic. The universe is a living and consolidated whole in which the parts are related as members. Not only does the whole exist for the parts and the parts for the whole, but in an organic being the whole precedes the parts. *Within* matter—not outside it, as in the Platonic view—are the forms, which function as purposive forces. They are eternal, just as matter (formless stuff) is external, and constitute a connected system of working causes throughout the animated and inanimated world. God, who is conceived as pure intelligence (form without matter), is the unifying principle or cause and purpose of the world. All beings in the world of nature, whether plants, animals, or men, unconsciously or consciously strive for the realization of their capacities by an inner impulsion which moves and attracts them to ultimate perfection. God, for Aristotle, is thus the unifying principle of the world, the moving cause or ground, and the creative source of order, law, intelligence, and beauty. The subordinate forms or causes are the same as what is now meant by *genera* and *species.* In man the telic principle comes into play as the entelechy, or soul, and of this the creative or rational element is a spark of the divine and external Spirit.

After Aristotle teleology next appeared in the teachings of the Stoics. For the Stoic the universe is interfused with a divine or rational element, which is regarded as purposive and good. All life, movement, and order have their source in it. Deity is sometimes regarded as an impersonal principle of order and law pervading the universe and sometimes as a personal, benevolent being acting from rational will. From Plato, Aristotle, and the Stoics, the purposive point of view was carried over into Christianity. Both the Church Fathers and the theologians of the Middle Ages developed world views which reflect Greek patterns. The religious tendency of thought from the second to the thirteenth centuries caused most teleologists to see in the Church, with other social institutions subordinated to it, a visible manifestation of the whole from which all spiritual life emanates.

2. **Teleology in early modern philosophy.**—With the development of modern sciences and the break-up of political and religious absolutism, the individual began to take on more significance and value. In consequence, a new teleology had to be worked out in keeping with the rising social and metaphysical pluralism. Leibnitz (1646–1716), a German scholar with striking philosophical originality, undertook this task. Physicists and mathematicians had accepted the hypothesis of mechanism and they were scoring a phenomenal success in explaining and controlling physical nature. Mechanism as a point of view seemed sound beyond question. Yet, on the other hand, in the human realm purpose was everywhere assumed. How shall these two apparently contradictory points of view be reconciled? Leibnitz proposed to solve the riddle by his monad theory and the suggestion that the world of nature lends itself to a double reading.

The theory of Leibnitz is considered in detail elsewhere. It is sufficient to state here that he regarded the world as made up of monads arranged in levels from the bodily to the spiritual. In the former type he found the expression of mechanism; in the latter class of monads he held that evidences of purpose appear. The chief element of teleology in his system is his belief in a preëstablished harmony between the different kinds of monads. God, for Leibnitz, is the highest monad, who functions as the principle of order and harmony in the world. His being is logically required as the cause of the monads, as the principle of continuity in nature, and as the ground of the eternal and necessary truths of logic and mathematics.[5] Leibnitz's metaphysics and teleology reappear with modification in the teachings of the German philosopher Lotze (1817–1881) and in the views of the English philosopher James Ward (1843–1925), to mention no others.

3. Teleology in eighteenth and nineteenth century thought.—The next important step in the history of teleology is to be found in eighteenth and nineteenth-century idealism. Here the chief exponents are the German idealists—Kant, Fichte, Schelling, Hegel—and their successors in Germany, England, and America. For our purpose Hegel's view may be regarded as typical. Hegel conceives reality monistically. It is the evolution in logical order of the Absolute Spirit, Mind, or Ego. The process is an eternal one in which Spirit expresses itself in an ascending scale of being—matter, lower organic creatures, the higher organic creatures, and man, with his social life and institutions. In a special way the Absolute manifests itself in human history and in racial or national consciousness. In human conceptions of right and law, in custom, morality, and conscience, in national ideals and ends does Spirit *externalize* itself and become *objective.* But it remains for art, religion, and philosophy, each in its own way—art through the form of intuition, religion through reverent imagination, and philosophy through the form of logical thought—to express the innermost essence of the Absolute Mind. All of these forms of being are self-manifestations or differentiations of the Eternal Mind, with varying degrees of clearness and depth. They are all expressions in greater or less degree of reality—reality as individuality, meaning, and value.

Teleology for Hegel, as in all forms of absolute idealism, is immanent and not external. The end is to be conceived not as satisfaction merely, which implies sensuous desire, striving, and the completion of certain changes yielding satiety. This is too anthropomorphic. Teleology, taken in the sense of aiming at the unfulfilled, stresses unduly the finite, and, according to Bernard Bosanquet, gives an unreal importance to time. Let it be remembered that teleology in the world is for the most part unconscious. It appears in the orderly mechanisms of nature, in the subtle chemical and physical processes by means of which material bodies are formed, in the refined vital processes of the flower, and in all living things. Thus, as Bosanquet says, there is teleology below consciousness, not as plan or purpose superinduced from without; that would be miracle. It is immanent and made possible by the organic relations of the part to the whole. But there is also teleology above consciousness. It dawns in the animal mind, but only comes to clear self-consciousness in man. And in the human realm it is clearly exhibited in the interlocked development of social institutions and in the culminating achievements of art, religion, and philosophy.[6]

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[5] See Benjamin Rand, ''Modern Classical Philosophers,'' p. 212. (Houghton Mifflin Co., 1924.)

For absolute idealism, then, the ''plan'' is the working of the whole; it is that reciprocal interdependence of part and whole which constitutes individuality or totality. Thus are meaning and value made possible, because meaning is found in interconnectedness or coherence, and value, where ends and means blend into one another. The finite mind exhibits the character of the whole in a unique way. On the one side, through the body, it is connected with the physical world, its mechanisms and laws; on the other side, the finite consciousness is interfused with the collective mind of the community, the ideals, aims, and purposes of the nation, and ultimately the Cosmic Intelligence. Man is thus seen to be a *living focus* of reality in which is exhibited consciously, though faintly, the inner wisdom of the absolute.

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[6] See Bosanquet, ''The Principle of Individuality and Value,'' esp. pp. 154–155.

Man's limited power of self-determination and rational freedom in the physical and social orders are the deepest clues to both the nature of reality and its immanent purpose.[7]

4. **Teleology in recent theory.**—We conclude our historical statement with a résumé of the prevailing present-day views.

a. There is the doctrine of *immanent teleology* outlined above, which had its origin in the German idealism of the eighteenth and nineteenth centuries and which was continued in the teachings of Fechner, Wundt, Paulsen, and Windelband in Germany; in Green, John and Edward Caird, Bradley, Bosanquet, McTaggart, and Hoernlé in England; and in W. T. Harris, Josiah Royce, J. E. Creighton, and W. E. Hocking in America. Here the end or goal is the active form of totality, the operative individuality of the whole realized in the timeless, spiritual reciprocity of means and ends, part and whole. The God of theism is, for these idealists—to the extent that they are speculative idealists—less than the *whole,* hence not the world ground and creative source of order, life, mind, and value.

b. There is a *theistic teleology* whose theory of reality may be called pluralistic idealism, or spiritual pluralism. In its present form it reflects the influence of Leibnitz in the seventeenth century and of Lotze in the middle of the nineteenth century. Among recent and present advocates of this theistic teleology may be mentioned James Ward, L. T. Hobhouse, H. Rashdall, C. C. Webb, W. R. Sorley, B. P. Bowne, G. T. Ladd, G. H. Howison, J. H. Tufts, R. M. Wenley, J. A. Leighton, and E. S. Brightman. For these philosophers, some of whom may be called objective idealists, others, personal idealists, God is conceived as the creative source of matter, life, mind, and value. All reality and value have their being in and for selves. The law, order, and evolution manifest in nature are the method according to which the Supreme Intelligence functions. The mechanisms discovered and traced out in nature by the sciences are the expressions of the Supreme Self; they are modes employed for the realization of the Divine Purpose. As in the theory of Leibnitz, mechanism is true, but only relatively so; teleology is the more inclusive truth. The end of the cosmic process is conceived to be the creation of rational and free self-determining persons in harmonious association with other finite selves and the Divine Self.

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[7] See Bosanquet, *op. cit.,* Ch. IV; W. Windelband, "Introduction to Philosophy," pp. 145–180; A. Seth Pringle Pattison, "The Idea of God in the Light of Recent Philosophy," Lect. XVII (Oxford University Press, 1920); J. A. Leighton, "Man and the Cosmos," pp. 272–276. (D. Appleton and Co., 1922.)

c. Evolutionary naturalism, a form of realistic philosophy, may be purposive and theistic in its world view. Professors Morgan and Alexander favor a teleological view in some respects like that of Bernard Bosanquet. In other respects their view implies the use of what to them is a new category entirely. It is like Bosanquet's view, described above, in that the purposive element is monistic and all-pervasive; it is manifested in the atom, in the flower and in man. In brief, the all-pervading telic element is the principle of activity, continuity, and unity in the whole. It is God. In the words of Morgan, "And if we acknowledge Divine Activity, of which for my constructive philosophy emergent evolution is the expression, it is to be conceived as omnipresent and manifested in every one of the multitudinous entities within the pyramid."[8] In his "Life, Mind and Spirit," Lecture X, on "Divine Purpose," Morgan makes it clear that purpose is not to be taken anthropomorphically. As for Absolute Idealism, so purpose for evolutionary naturalism is in the main unconscious, manifested immanently in all evolutionary advance and progress. It is in all physical phenomena and vital and mental processes as the "Directing Activity," the "Creative Source of Evolution," "the Nisus to Perfection," "the Eternal Principle of Unity and Causality." The differences between Morgan's and Alexander's conception of the theistic element in nature is brought out in Chapter XIX.

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[8] "Emergent Evolution," p. 13. (Henry Holt and Co., 1924.)

In his philosophy of evolution under the title "Development and Purpose," the late L. T. Hobhouse advances a naturalistic theory of evolution which is teleological and theistic, but which differs from the views of Morgan and Alexander in that his cosmology is more pluralistic. Moreover, he designates the systematizing, ordering, and purposive principle in the world as "Mind." It may also be said that his approach to the whole problem of cosmic evolution is from the side of psychology, ethics, and sociology, and not from the side of biology and physics, as it is in the case of Morgan and Alexander.[9]

But not all expositions of evolutionary naturalism in recent cosmological theory have been purposive in the sense that purpose implies the presence of a deity, a cosmic Mind, or God. The works of R. W. Sellars, Edmund Noble, and Hon. J. C. Smuts may be cited as examples. All three of these writers repudiate mechanism as a category adequate to describe the processes of nature. They hold, each in his own way, that nature exhibits levels or planes of organization; that there is in nature an ascending order of selectivity, organization and synthesis corresponding to these levels; that matter, life, mind, personality, and value constitute this ascending scale of realities as "emergent" qualities; and that there is an *immanent teleology* running through the whole course of nature. They further agree in the claim, each with varying emphasis, that this immanent "organic momentum" or "trend" (Sellars), this "purposive evolution" (Noble), this "holistic driving force" (Smuts), is to be explained naturalistically and without resort to a cosmic mind or God. Sellars, particularly, is insistent upon this latter point. The views of Noble and Smuts are closer to a theistic teleology.[10]

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[9] See *op. cit.,* Chs. VI–IX. (The Macmillan Co., 1913.)

[10] See R. W. Sellars, "Religion Coming of Age," Chs. XII and XIII (The Macmillan Co., 1928); "Evolutionary Naturalism," Ch. X (Open

d. Henri Bergson's philosophy, while an evolutionism, is not to be classed with realism; it is idealistic. It stresses the reality of *time* in the cosmic process. Yet in respect to the character of the cosmic process it attempts to steer a course between mechanism and finalism. ''Both go too far,'' says Bergson, ''for they attribute to nature the most formidable labors of Hercules in holding that she has exalted to the simple act of vision an infinity of infinitely complex elements, whereas nature has no more trouble in making an eye than I have in lifting my hand.''[11] Nature's simple act has divided itself automatically into an infinity of elements. Mechanism explains the world after the analogy of a machine which is made of parts externally related and selectively fitted together; teleology explains it after the manner in which man with effort realizes aims and purposes within himself. Both are anthropomorphisms. For Bergson the movement of reality has direction and it realizes goals, but these come about through free, spontaneous, and unpredictable activity. Only in man does the *vital impetus* become self-conscious and here only in a limited sense. Thus, as Bergson says, the orderly process of evolution ''oscillates, no doubt, around finality, and yet we cannot define it as finality, for it is sometimes above and sometimes below. . . . Life in its entirety, regarded as creative evolution, is something analogous; it transcends finality, if we understand by finality the realization of an idea conceived or conceivable in advance. The category of finality is too narrow for life in its entirety.''[12] Yet Bergson's theory, as he grants, is closer to teleology than it is to mechanism. In fact it is theistic, for God is identified with life, action, and freedom in nature. And teleology is immanent.

Court Publishing Co., 1922); ''The Principles and Problems of Philosophy,'' pp. 373–384 (The Macmillan Co., 1926). See also Edmund Noble, ''Purposive Evolution,'' Chs. XLVII, XLVIII (Henry Holt & Co., 1926); Hon. J. C. Smuts, ''Holism and Evolution,'' pp. 341–343. (The Macmillan Co., 1928.)

[11] ''Creative Evolution'' (translated by Arthur Mitchell), p. 91. (Henry Holt and Co., 1911.)

[12] *Ibid.,* pp. 223–224.

e. Professor E. G. Spaulding, also a realist, holds a teleological world view which he defines as both immanent and transcendent. Granting that there is change and evolution in the world, he denies that it is universal. Particular instances of *things* and *qualities* change, but justice, beauty, and truth do not change. In brief, change and evolution are limited to the world of existence, the world of space and time. There is a world of subsistences, for example, the realm of values, space and time, numbers, logical principles, and the principles of change themselves—these are eternal. " . . . God is the totality of values, both existent and subsistent, and of those agencies and efficiencies with which these values are identical."[13] In other words God is the efficient and direct agent or power which "makes for" values, which leads to them or produces them.[14] This power is immanent in the creative processes of nature in the sense that there is no existential agent external to it as a whole; it is *transcendent* to any part of the world process in the same sense that justice transcends or is something more than any particular just act, motive, or person.

Similar in some respects to the theory of Spaulding, yet different in other respects, is the doctrine of evolution and teleology of those who hold that the category *evolution* applies to a part of the universe and not to the whole. Absolute idealism, from Fichte, Schelling, and Hegel down, has stressed this point. In recent philosophy, this point of view is represented, for example, in the writings of John Elof Boodin and A. E. Taylor. As indicated at the close of Chapter X, both hold that the term *evolution* is applicable to parts within the universe and not to the totality of the world. Since, as they teach, evolution can take place only where there is interaction between the environment and the environed, and there is nothing to environ the universe, the world as a whole cannot evolve. Evolution within the universe, therefore, is conditioned by some reality or realities strictly unchanging and eternal. All change and evolution within the world is thus a teleological response to and a direction by either higher levels of being, or God (Boodin), or by such eternal principles as coherence, harmony, and individuality (Taylor). Obviously, such a teleology is immanent and not external.[15]

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[13] "The New Rationalism," p. 517. (Henry Holt and Co., 1918.)
[14] *Ibid.*, p. 514.

g. In his "Critique of Judgment," Immanuel Kant had taught that both mechanism and teleology are concepts of regulative or practical (not constitutive) use in experience, but not applicable to reality. Positivism and phenomenalism in philosophy since Kant's time have adapted this point of view to their own conceptions of knowledge and reality. In recent philosophy Hans Vaihinger has advanced a view which amounts to the same theory as that advanced by Kant. Taking the position that all thought, all ideas, and all theorizing lie between sensation and movement, he concludes that such categories as mechanism and teleology are only *useful fictions.* They have practical significance, we cannot get on without them, but we must remember that they are only human ways of thinking and have no bearing upon reality. Moreover, our human concepts are constantly changing. Without attempting to reply to this "as if" philosophy of Vaihinger, may we not say that such a view is self-defeating? On such a theory, how can Vaihinger's philosophy be true?[16]

We shall conclude this section with a brief résumé of the leading evidence for a teleological world view. Since different philosophers conceive the purposive element of nature differently, just as mechanists interpret the world differently, the arguments cited below will sometimes overlap and even conflict with one another. In the main, however, they are logically harmonious.

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[15] See J. E. Boodin, "Cosmic Evolution" (The Macmillan Co., 1925); and F. O. Bower *et al.,* "Evolution in the Light of Modern Knowledge," Ch. XII, "Philosophy," by A. E. Taylor (D. Van Nostrand Co., 1925).

[16] See Hans Vaihinger, "The Philosophy of 'As If,'" (translated by C. K. Ogden), pp. 101 ff. and pp. 271 ff. (Harcourt, Brace and Co., 1924.)

B. Arguments for Teleology in the World as a Whole

1. **There is adaptation and adjustment in the inorganic world.**—Professor Lawrence J. Henderson, a biochemist at Harvard University, in "The Fitness of the Environment" and "The Order of Nature," contends that before life appeared on this planet there were brought into existence not only the chemical and physical conditions necessary to the life of organisms, but such an arrangement of these conditions as to form a suitable environment for their generation and development. For example, there must have appeared upon the earth that unique combination of mineral salts, gases, moisture, and water, atmosphere, and temperature congenial to and productive of life. These physical conditions must have existed in the right combinations—even more, they must have possessed, by some means or other, the almost infinite capacity for change and transformation. And all of this may be interpreted as anticipatory of the requirements of life. It is hardly conceivable that by accident or blind chance these material elements could have taken on their fitness for living things. He recognizes a teleological character to the chemical elements.[17]

2. **Indeterminism is accepted by physicists for the behavior of the minutest "particles" of matter.**—Reference has been made to Heisenberg's "principle of uncertainty" as applied to the interaction of the infinitesimal "drops" of matter. Indeterminism, as Heisenberg views it, means that in the microscopic occurrences—the basic units of matter—there is no determinism; in fact, there is only the vaguest probability. Only in macroscopic events—that is, in the interaction of masses of the units, or electrons—is there determinism; and here the law of regularity is in the nature of a statistical average. This acceptance of indeterminism by physicists has a very upsetting effect

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[17] See Lawrence J. Henderson, "The Order of Nature," esp. pp. 190, 192 (Harvard University Press, 1917). Also "The Fitness of the Environment," Chs. VII, VIII. (The Macmillan Co., 1913.)

upon the old and generally accepted view of causality. A strict deterministic application of the principle of cause and effect in the older physics meant that, given a complete quantitative description of an antecedent event (the cause), the consequent event (the effect) could be determined. In other words, exact prediction is possible. But, now that the physicist penetrates by analysis to the atomic and electronic level of matter and finds things acting in ways for which he can find no cause and for which the concept of cause has no meaning, complete determinism seems to have been only a fiction. From the present state of theoretical physics, therefore, it is plain that anyone who wishes to defend a mechanistic and deterministic world view must do so without the support of physical science. Mechanistic biologists and deterministic psychologists must now find the bases for their reasoning in their own observations and experiments, and not lean on the physical sciences for support as they have done in the past.[18]

3. **The facts of biology point to a purposive world view.** The controversy over mechanism and vitalism was treated in Chapter XI. It was made clear that mechanical concepts are applicable to living things and to vital processes, but that they are not entirely adequate. There is more in the organism than causes and effects in measurable dimensions. Life manifests itself in the organism as an end-realizing activity; it is resourceful in its use of means; it exercises strategy in overcoming obstacles. In the words of Viscount Haldane:

> In physics the data are taken as external to and independent of each other, that is of the essence of the procedure of the mathematical physicist. His symbols take no cognizance of behavior

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[18] See J. S. Haldane, "The Sciences and Philosophy," (Gifford Lectures, 1927 and 1928) (Doubleday, Doran and Co., 1929); P. W. Bridgman, "The New Vision of Science" in *Harper's*, March, 1929, pp. 443–457; W. H. Williams, "Determinism and Indeterminism in Quantum Physics," *The Personalist*, Oct., 1929, pp. 241–247; A. S. Eddington, "The Nature of the Physical World," esp. Ch. X, "The New Quantum Theory." (The Macmillan Co., 1928.)

as exhibited in life and purposive action. But when we are observing a living organism this is just what we must take account of. We cannot get at the meaning of the reality of our data if we take them as if existing in isolation from each other.[19]

The living organism exhibits what Driesch calls a ''dynamic teleology,'' an unanalyzable autonomy with such an organization of parts that each functions for the whole and the whole for the parts. Biological science is replete with such terms as ''beneficial'' and ''harmful,'' ''foods'' and ''waste products,'' ''organizations'' implying a reciprocal relation of part and whole, ''growth,'' ''development,'' ''behavior,'' ''reproduction''—all of which imply continuity through change. In a word, it uses a language which implies that certain things take place for the sake of other things, and this is an immanent purposiveness. It may be unconscious, though certainly not always wholly so in human beings; yet it is teleological in the sense that it implies value.

A word should be said here as to whether the biological term *evolution* is not itself teleological. Whether *evolution* be taken in the biological or cosmic sense, it means continuity of direction, change, creation, and novelty through variation, adaptation, selection, use, and growth. Vital evolution particularly is orthogenetic in the sense that it shows definiteness of direction. Social evolution displays the same traits. Terms, it is true, are but symbols and lend themselves to definition. Nevertheless it is difficult to understand the meaning of the words used by scientists in description of the evolutionary process if they do not imply what might be called an immanent teleology.[20]

4. **The organic character of reality as a whole.**—It may be doubted reasonably that every part of reality changes through evolution. Without permanence of some sort there could be no change; there must be continuity and perma-

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[19] ''The Philosophy of Humanism and of Other Subjects,'' p. 208. (Yale University Press, 1922.)

[20] See Gilbert N. Lewis, ''The Anatomy of Science,'' Ch. VIII. (Yale University Press, 1926.)

nence through change. Moreover, there must be a continuing creative ground of change, for how can there be more in the effect than was in the cause? Yet in spite of both permanence and change, notwithstanding the multitudinous array of existences and subsistences (concrete sense objects and concepts, laws, relations, values, *et cetera*), the world as known through experience is a functional whole. The organic character of the world is assumed to be true in the working concepts of the sciences; for example, the principle of the uniformity of nature and the concept of cosmic evolution. There is a tendency among philosophers of the present and recent past, even among members of diverse schools, to recognize the organic character of nature; for example, such realists as A. N. Whitehead, C. Lloyd Morgan, S. Alexander, Bertrand Russell, and R. W. Sellars, and such idealists as Josiah Royce, M. W. Calkins, W. E. Hocking, C. M. Bakewell, and J. A. Leighton. Whether reality is conceived in terms of space-time, electrons and protons, energy units, monads, or selves, there is believed to be some kind of unity forming the bond of connection and interdependence. This view is not repugnant to pragmatists and vitalists. In the words of A. N. Whitehead: "Science is taking on a new aspect which is neither purely physical nor purely biological. It is becoming the study of organisms. Biology is the study of the larger organisms; whereas physics is the study of the smaller organisms. There is another difference between the two divisions of science. The organisms of biology include as ingredients the smaller organisms of physics. . . . The concept of an organism includes, therefore, the concept of the interaction of organisms."[21] The universe may thus be regarded as a system of interrelated parts or perhaps a system including subordinate systems related in varying degrees of internality, such that the parts serve the whole and the whole serves the several parts.

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[21] "Science and the Modern World" (1925), pp. 150–151. (By permission of The Macmillan Co., publishers.)

The eminent English physiologist, J. S. Haldane, in his work on "The Sciences and Philosophy," hints his agreement with Professor Whitehead's view. He speaks of physics with its exact quantitative method and its mechanistic concepts as resting on things "seen only partially" and of biology as giving us "something nearer to reality itself."[22]

5. Human experience of purpose and the world's fitness to human purpose.—Human experience is purposive to the core. The individual person devises, plans, aspires, and strives to realize his aims. Groups of individuals in the form of clubs, civic organizations, religious bodies, states, nations, and races, set up conscious objectives and apply themselves with self-denying devotion to reach them. The social sciences, history, politics, law, sociology, economics, social psychology, ethics, and religion employ purposive concepts in describing and explaining individual and group activity. Is it possible that so persistent a type of experience as the purposive way of thinking is a delusion and ultimately false? The neural explanation of human behavior in terms of stimulus and response may be true as one side of the matter, and this method certainly has its uses. But the very attempt to give a mechanical explanation of conduct involves adherence to a purpose consistently. To deny the validity of the purposive explanation of conduct is to ignore an essential logical principle present in every explanation; namely, the *selection of a point of view from which to view phenomena.* Furthermore, it means that we impeach reason itself, that we condemn as false and misleading what is most persistent in human experience. No; we are not yet ready to apply quantitative methods *solely* in administering justice, in explaining history, social institutions, religion, and morals.

If it be true that in man, nature and the cosmic process comes to self-consciousness, if it be true that man is significant as a part of nature, is it not reasonable to suppose that what he finds central and most meaningful in his own experience must give some clue to the nature of the whole? Certainly man does take himself seriously, for he believes that by searching, by experimentation, and critical reflection he may know the world and himself. This is true despite man's physical minuteness over against a world of huge dimensions, a world ever enlarging before his ken. Man remains the living, conscious, purposive being who devises new instruments and new objectives for extending his knowledge and control over the world. If experience contains any implications for a theory of reality—in other words, if experience is metaphysical at all—it would seem to suggest that the world is purposive in some sense.

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[22] Pp. 193, 203. (Doubleday, Doran and Co., 1929.)

Looking from another side, we may ask, does not the world's fitness to man's needs suggest that mind in some sense pervades the whole? Certainly man finds pattern, order, organization, and ends realized in the world all about him. The concepts applicable in explaining himself also hold of nature outside himself. Thus the world lends itself to human knowing, to human control, and, not less significant, to human physical, moral, and esthetic needs. In brief, man feels at home in the world; nature is adapted to the demands of a purposive being. What exists lends itself to the rational and purposive treatment, and in consequence man infers the teleological character of the world.

6. The presence of values in the world.—No one is prepared to deny the presence of logical, ethical, esthetic, and religious values in human experience. Man's natural cravings for truth, goodness, beauty, and a cosmic companion, or God, with all their intellectual, emotional, volitional bearings in individual and collective life, constitute the major interests in human experience. So far as sensibility, feeling, and mind exist in animals and plants, they too doubtless experience value. But, so far as we know, it remains for man to pursue and enjoy self-consciously spiritual realities. As we shall explain more clearly later, viewed reflectively and inductively, values exist *only in and for selves.* Again, we must ask, is not an experience so central and so big with meaning as truth, goodness, and beauty a clue to the nature of man's world?

Indeed it would be difficult to explain how truth and error could have any meaning in a mechanistic world. A thoroughgoing machine could make no mistake, nor would it have any need for the concept *truth.* Moreover, to impeach truth value undercuts the whole structure of knowledge—it destroys mechanism as well as teleology. Truth value, therefore, must stand and with it the possibility of untruth. The question remains, of course, is human experience of intellectual, ethical, esthetic, and religious values sufficiently metaphysical in its implications to warrant the inference that the world as a whole is value-realizing? The hypothesis of cosmic teleology seems to be implied in the teleology which runs through the world of values. And this conclusion harmonizes with the organic character of the cosmos implied in the physical, biological, and social sciences.

7. **The gaps or discontinuities in nature are most readily explained on the teleological hypothesis.**—The discontinuities in nature are even more apparent than the continuities. The latter are found only after prolonged and patient research and experimentation. Is the organic continuous with the inorganic? and mind with life? Do plants, animals, and man form a continuous line of descent from matter? Are there not gaps between matter and living things, and between life and mind? There do appear structural and functional gaps in nature despite the interconnectedness displayed by order and law. Either life and mind are coeval with the primitive space-time, or some other ultimate stuff; or a doctrine of creative evolution which *somehow* brings life, mind, and values out of the pristine substance is necessary. On either theory the world as it is, is before us with levels of being, and it is difficult to see that these results could appear without something

of the nature of mind throughout. Discontinuity as well as continuity, order and disorder, levels and emergence, as well as truth and value, imply a controlling, end-realizing being or principle.

8. **Natural selection.**—Natural selection in the Darwinian sense as an explanation of the origin of species was thought to be mechanical. It did away with special creation. But did it make irrational a teleological view of nature in the midst of which natural selection takes place? It will be remembered that Darwin's evolution theory involved such other assumptions as variation, heredity, and the struggle for existence. The ultimate cause or causes of evolution or of the origin of species are not known. Is it not reasonable to assume that what Darwin did was to show that creativity and purposiveness are not intermittent but coextensive and continuous with the cosmic process? Natural selection in this sense is applicable to any plane or level of existence, and it is seen to be the method by which teleological nature reaches her ends.

9. **Replies to attacks against teleology.**—There are certain stock objections to teleology which may be noted briefly:

a. The existence of evil and maladjustment in the world. Evils of several kinds exist in the world, and these evils constitute a problem for teleology. There are things in the world which appear indifferent to purpose, to say nothing of those things which oppose the realization of ends and values. The metaphysical status of good and evil will be treated in Chapter XIX. It will be understood, of course, that any explanatory principle applied to the cosmos meets with difficulties enough, and that we advance teleology only as the theory most concordant with the facts of experience.

b. It is further argued that teleology is a huge anthropomorphism, that it is the product of a human wish and hope. It is sufficient here to say that all knowledge is human, hence anthropomorphic or anthropocentric in the broad sense. Nothing is gained logically by labeling teleology, or even mechanism, an anthropomorphism.

c. Positivists and agnostics claim that there is nothing in experience which warrants metaphysical assertions. Human knowledge, they contend, deals only with descriptive symbols; it tells us nothing about the ultimate reality. An appraisal and criticism of these claims has already been made in our epistemological examination of the nature of proficient knowledge.

d. It is sometimes argued that mechanism has an esthetic character which satisfies a certain kind of longing for God. It may be granted that there is an esthetic element in religion and that it is important; but is the esthetic the sole element revealed in a psychological and historical study of religion? It is evident from the most superficial study of religion that it is not.

IV. Summary Statement Regarding the Controversy

A. The Tendency of New Views to Incorporate Both Categories

Recent philosophical theories of cosmic evolution attempt to embody the old categories of mechanism and teleology into a *new view* which they call "emergent evolution" (Morgan and Alexander), "evolutionary naturalism" (Sellars), "creative evolution" (Bergson), "creative synthesis" (Spaulding), "emergent vitalism" (Broad), or "organicism" (Whitehead and Henderson). By the aid of such concepts these writers hope to describe the creativity and direction which the universe displays.

Writers who show a tendency to adopt a new category reason somewhat as follows: The attempt, on the one hand, to reduce all events, objects, and processes in nature to the quantitative concepts of physics, and, on the other hand, the attempt to level everything in nature up to man and the psychological categories, are both crude and blind to facts. One ignores the unique qualitative aspects of nature, the other overlooks the quantitative. Taking the view, then, that *at the beginning* there was matter, physical energy, or space-time (for some, mind and order), this theory holds that in the course of evolution new and more refined types of being appear. Evolution is conceived epigenetically—that is, through an energy or power wholly immanent, first matter, then life, then mind, then values, appear. These types of being are called *gradients, levels,* or *emergent qualities,* and are held to be the product of creative synthesis and organization. We need to recognize, with Professor Sellars, that nature is "insurgent, creative, a domain of synthesis and origination."[23]

The exponents of this view attempt to establish their position by two lines of reasoning: First, they argue that physical and chemical processes can no longer be regarded as crudely mechanistic. Here appeal is made to the finer physical processes and to synthetic chemistry. Chemical compounds, it is held, are not mere aggregates; they are organizations of elements in such a way that qualitative and quantitative novelty appears. The success with which chemists have approximated living matter by synthetic means might also be cited. Thus the inorganic and organic are shown to be continuous. Second, evolution is regarded as a process of differentiation as well as of creative synthesis. Given time and new types of relationships, such accumulative differences appear to warrant the use of such terms as *levels* or *planes* of being. Thus, while there is genetic continuity, there is also qualitative discontinuity. Evolution, growth, creative synthesis, and organization bring into existence novelties on higher levels, which in the words of Professor Sellars "cannot be led back to the lower without a remainder. We must take time and novelty seriously."[24]

What, now, is to be said of teleology and purpose? Rejecting both the older theories of teleology, the "carpenter theory," and finalistic causality, Alexander and Sellars advance a type of internal teleology which they hold is a product of organization.[25] Thus in all planes of being there is a responsiveness of part to part, a tendency of adjustment, unique to that plane. On the organic level there is an "organic momentum" and on the human plane *selection* or *choice*. This means, as Professor Sellars asserts, that there are degrees of freedom in nature.[26] Thus the inorganic has little freedom, plants and animals have a little more, and man, because of his power to interpret and adjust, is freest of all.[27]

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[23] See "The Principles and Problems of Philosophy," p. 370. (The Macmillan Co., 1926.)

[24] "Evolutionary Naturalism," p. 331. (Open Court Publishing Co., 1922.)

It should be noted, before closing this section, that while Alexander, Morgan, Hobhouse, Whitehead, and Bergson advance the hypothesis of a Cosmic Mind or God, Professor Sellars finds no room for deity. Life and finite mind are for him the highest levels of cumulative organization. Alexander regards deity as the supermental qualities which are emerging from a complication of finite minds. Hobhouse, Morgan, Whitehead, and Bergson conceive God as in some sense primordial. Professor Sellars, however, objects to the postulate of an Activity, Guiding Principle, or Creative Will in nature for the same reason that he rejects vitalism and dualism. He holds that physical systems contain in themselves the power for an evolutionary process.[28]

B. The Recognition of Cosmical Purpose

The drift of the argument throughout this chapter is clearly in the direction of a teleological world view. Any final view of reality as a whole, we believe, must recognize the truth of *mechanism, evolution, organization,* and *creative synthesis*. But while mechanism is true and indispensable in nature, it is subordinated to purpose; it is itself an expression of purpose. While there is evolution and creative synthesis, there is also permanence through change. With Morgan, Bergson, Boodin, Spaulding, Taylor, and others, we hold that there is something about the universe that does not evolve, and it is the creative source and ground of the evolutionary process. For want of a better name, we have chosen to call this creative and enduring element *God.* Both discontinuity and continuity are manifest in the world. Life and mind, so far as we can yet see, are coeval with matter. Creation is a continuous process. The mechanical uniformities and the laws of the physical order we interpret after the analogy of habits in sentient beings. Teleology would seem to require but two conditions: (1) the establishment of types of reaction which remain uniform so long as their maintenance achieves the ends toward which they are directed; and (2) which at the same time possess the power to modify these reactions in the course of the progressive realization of the end.[29] In man the capacity to form habits and the power to initiate fresh responses to new situations imply a union of these two conditions. Thus, in man are combined the mechanical and free, purposive activity.

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[25] See Sellars, "The Principles and Problems of Philosophy," p. 377.
[26] See *Ibid.,* p. 375.
[27] See *Ibid.,* p. 376.
[28] See *Ibid.,* p. 378.

Teleology for the most part is immanent. Yet in the sense that the higher levels of being exhibit more or a finer purposiveness than the lower, teleology is transcendent. There is something more of reality and value in the whole than in the part. Such a view, we believe, takes account not only of the physical and biological sciences, but also of those sciences which deal with a man as a creature of purpose and value. It makes room in the world logically for both matter and mind, mechanism and purpose.

Since, as Professor Robert A. Millikan says: "Mankind's fundamental beliefs about the nature of the world and his place in it, are, in the last analysis, the great moving forces behind all his activities,''[30] there is in such a view of the world not a little inspiration for aggressive living. And there is wisdom in the words of Marcus Aurelius: ''The world is either a welter of alternate combination and dispersion, or a unity of order and providence. In the former, why do I care about anything else than how I shall at last become earth? But on the other alternative I feel reverence, I stand steadfast, I find heart in the power that disposes all.''[31]

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[29] See A. E. Taylor, "Elements of Metaphysics," pp. 233 ff. (Methuen and Co., 1924.)

But what is the cosmic purpose? If our reasoning has not been entirely amiss, the goal of the world process is the creation and fashioning of free, self-determining ''souls'' or selves. In the words of Keats, this world is ''the vale of soul-making.'' The levels of being below self-determining personalities—matter, life, and mind—are the stages by means of which selfhood in the perfect society of selves is in course of realization. Since the end of the cosmic process involves the perfection of all the varied activities in nature, it may be described in the characteristic formula of any intellectual discipline. The complete formula probably would be a combination of all of them. In the language of physics it would be a state of equilibrium of energy; for biology, a state of perfect adaptation between living things and the environment; for sociology, the achievement of the perfect individual in the perfect society; for psychology, the complete adjustment of the psychophysical organism to its physical and social surroundings; for the value disciplines, the full experience of truth, goodness, and beauty in developed persons living in harmonious coöperation with other selves. We prefer to state the end of our goal in terms of selfhood, because only in self-conscious, reflective personality does the world-process come to a conscious realization of itself in terms of value.[32] The full implication of this thesis is developed in our treatment of human and divine selfhood in Part IV.

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[30] Address before New York Chamber of Commerce, New York *Times*, Nov. 17, 1928.

[31] ''Meditations,'' VI, 10.

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[32] See F. C. S. Schiller, ''Riddles of the Sphinx,'' pp. 417 ff. (The Macmillan Co.); J. A. Leighton, ''Man and the Cosmos,'' pp. 276 ff. (D. Appleton and Co., 1922.)

Chapter XIII

THE QUALITATIVE CHARACTER OF ULTIMATE BEING

ONE of the oldest questions in the history of philosophy is the problem of φύσις, that is, the problem of the ultimate nature of things. The earliest philosophers were called *physicians,* because they sought to find the fundamental principle of reality. The term φύσις lives to-day also in the word *physicist,* and the physicist, more than any other type of contemporary investigator, is interested in ascertaining what the basic stuff of the universe is.

I. The Nature of the Ontological Problem

The problem of the ultimate nature of the world may be attacked from three points of view. In the first place, it may be considered from the standpoint of *cosmology,* which point of view deals with the way in which nature manifests itself; that is, cosmology is a study of the structure and form of the world rather than an investigation of what it is made of. The second and third points of view, which are generally considered under *ontology,* are sometimes treated under cosmology. Our position is that cosmology is rightly taken as a larger classification than ontology, but that it is a branch of metaphysics, of which ontology is a constituent member. We have already discussed the phases of cosmology proper in our consideration of the questions of matter, life, evolution, and teleology. Our present concern, therefore, has to do with two problems of ontology.

A. The Problems of Ontology

The two problems of ontology, put in question form, become: First, what is the stuff of the world, or φύσις, from the standpoint of quality? In other words, what kind of stuff is the world made of? Second, what is the nature of the world from a quantitative point of view? Is the world just one system without real separate particular parts, or is it an aggregate made up of many different things added together?

The first question, when followed through, brings us to a survey of the theories generally classified as either *materialistic* or *idealistic*. The second question when dealt with ushers us into the debate between *singularism* and *pluralism*. We shall consider in this chapter the problem as to whether the world, qualitatively, is idealistic or materialistic, or neither, or both. In the chapter immediately following, the question as to whether the universe is a singularistic *one*, or a pluralistic *many*, will be considered.

B. The Different Theories in Qualitative Ontology

Man has been able to discover, through reflection or through experiment, but two kinds of substances, in terms of which the world may be explained. These two fundamental stuffs are mind and matter, or as they are sometimes named, mental energy and physical energy. How he has interpreted the world in terms of these two stuffs tells the story of his philosophical and cultural history.

1. There have been those who have treated the world as made up of the two substances, and they have regarded these two substances as entirely different in quality, function, and value.

Those who have embraced this twofold theory are called *dualists*.

2. Then there are those who have taken the point of view that the world is fundamentally matter and that what

is generally known as mind is an aspect of or a product of some physical process. As might be surmised, the exponents of this theory are called *materialists.*

3. Another doctrine of ontology declares that qualitatively the basic substance of the world is mind and that what we in our ordinary experience take to be matter is an appearance of, or a consequence of, mental activity. Needless to say, the proponents of this theory are *idealists.* Before concluding the chapter we shall briefly examine two ontologies which try to reconcile materialism and idealism without involving themselves in the difficulties of dualism. These ontological theories are the doctrines of *neutral monism* and the *theory of emergence.*

We are now ready to treat each of the three chief ontologies in some detail.

II. Ontological Dualism

Before going into the discussion of dualism as an ontology, it must be pointed out that there are other types of dualism treated in philosophy.

A. TYPES OF DUALISM

1. **Dualism, not ontological.**—There is, in the first place, *epistemological dualism* which we have already examined, a dualism which distinguishes between the subjective or ideational, and the objective or environmental phases of experience. Usually epistemological dualism is emphasized by those who are ontological dualists. But materialists and idealists may legitimately separate the knowledge situation into subjective and objective features without surrendering their monistic ontologies.

Another type of dualism is *ethical dualism;* this doctrine refers to the dichotomy in man's nature of spiritual and physical interests. Dualists of this standpoint talk about warfare between the flesh and the spirit, and between duty and desire. This type of dualism is represented in the biblical passage relevant to the moral character which the Apostle Paul ascribes to himself: "For the good that I would, I do not, but the evil which I would not, that I do."[1] Many of the important pieces in the realms of literary and operatic art are expressions of the struggle man has had to let the "angel" in his nature overcome the "brute."

A third kind of dualism not to be confused with ontological dualism is *cosmological dualism.* Cosmological dualism presents the universe as manifesting two cosmical principles—one, the principle of light or perfection; the other, the principle of darkness or evil. These two entities are at war in the world as a whole, just as the soul and the body are in conflict according to ethical dualism. In the religion of the Persians, especially in the religion of Zoroaster, the two principles in conflict are Ahura-Mazda and Ahriman. The former represents the power of good; the latter, the power of evil. In Chinese religious thought the two cosmical forces have been similarly and respectively represented by Yang and Yin.

Before discussing ontological dualism as it has been presented by philosophers, we wish to point out that it is espoused also by those in prereflective levels of culture. Primitive man has always recognized not only dualisms of the epistemological, ethical, and cosmological order, but he has also entertained a philosophical dualism. He has interpreted the world as both material and spiritual. The present-day man in the street, or the ordinary individual about us, who has never had the occasion to develop an interest in ontology, is unconsciously an ontological dualist. He thinks of the world as a whole as being like his own experience, and he thinks that the universe as a whole, like himself, may be divided into material and mental substances.

2. **Ontological dualisms.**—In ontology proper we may distinguish between two kinds of dualism: *agnostic* and

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[1] "Epistle to the Romans," vii: 19.

dogmatic dualism. Agnostic dualism is the theory of those who emphasize either the material or the mental feature above the other feature. The adherent to this view is confident about one factor in reality, but he is doubtful about the existence of the other. The dogmatic dualist is free from either materialistic or idealistic prejudices and treats matter and mind as unmistakably equal in substantiality and value.

If a dualist is sure regarding the reality of matter, but is doubtful regarding the nature of mind, he may be called an agnostic dualist with a materialistic propensity. If a dualist is certain about the nature and power of mind but is doubtful concerning the reality of matter, he may be called an agnostic dualist with an idealistic bent. If a dualist is certain both with respect to the reality and function of mind and matter and has no doubts regarding the existence of either, he may be called a dogmatic dualist. Dogmatic dualism is the classical dualism of philosophy.

We may indicate the distinction between the two kinds of agnostic dualism, and between them and dogmatic dualism by showing how these three points of view deal respectively with the problem of qualities. As has been pointed out previously, the components of our experience may be described as possessing either primary or secondary qualities or both. Primary qualities refer to such attributes as size, shape, inertia, and motion; secondary qualities relate to such attributes as color, sound, odor, and taste.

The agnostic dualist with the materialistic emphasis places primary and secondary qualities in the realm of the physical. Size, shape, weight, and motion, as well as color, odor, sound, and taste, are characteristics of external objects and characterize these objects whether the objects are perceived or not. According to this kind of a dualist, there is mind, to be sure, but its content and its value are determined largely by the impressions it receives through the stimulation of outside objects. Needless to say, it is a short cry from this kind of dualism to an out-and-out materialism, in which the mental as unique and independent is repudiated altogether. A point of view like that of agnostic dualism, with the materialistic emphasis, is that of *methodological behaviorism.* The methodological behaviorist (whose views we discuss later) does not deny mind, but his interest is exclusively devoted to the material aspects of man's nature.

For the dualist of the second type of agnostic propensity the one sure thing about our experience is the reality and utility of mind. The agnostic dualist with an idealistic temper places primary and secondary qualities in the knower rather than in the known. Concerning the outside stimulus which is the conditioner of his subjective knowledge he is very willing to express his nescience. As the materialistic dualist finds the world of mind qualityless, a sort of pure mental being, so the idealistic dualist regards the world of the physical or objective as simple, qualityless matter. And as it is very easy for the former type of dualist to go over completely into materialism, similarly it is very easy for the latter type of dualist to surrender his dualism for a thoroughgoing idealism. *Personal idealism,* which has already been discussed and which will receive further treatment later, is an agnostic dualism of the idealistic type. The personalist believes in the physical environment, but it is to him inferential and postulated. Its character is determined by inferences from data which are real because they are data of a mind. A more significant agnostic dualism of the idealistic sort is that of Kant. To Kant the nature of the external object, as it is in itself, is unknowable. It is just a "that out there." The qualities which it possesses are all ascribed to it by the mind which knows it.

The dogmatic dualist, or classical dualist, has solved the problem of qualities by placing the primary qualities in matter, and the secondary qualities in mind. He thus seeks to forestall the tendency to put both classes of qualities in one side of experience alone.

We are not at this point interested in ontologies other than dualism, but it will not be out of place to suggest here that a skeptic is one who fails to see how either primary or secondary qualities can be located in mind or in matter. He merely takes the qualities as they come to him and does not concern himself at all with the question as to whether these experiences of size, shape, odor, and color are supported by physical substance or psychical stuff.

The neutral monist in his idea of the qualities regards them as being found both in the physical and the mental, as we have suggested. Whether the qualities are recognizable in the physical or psychological aspects of experience depends upon the method by which the qualities are investigated. The emergentist believes that primary and secondary qualities are both real. Like the dualist he regards the primary qualities as characteristics of matter and the secondary qualities as characteristics of mind. But instead of separating them into two mutually exclusive realms as does the dualist, he treats the secondary qualities as emergents out of the sphere of the primary, and as we shall see later he regards the qualities called *tertiary* as developments out of the qualities which are called *secondary.*

So much for a general introduction. Let us now pass to a criticism of dualism, attending only to dogmatic, or classical dualism, the theory which represents the chief dualist strain in ontological reflection.

B. THE CASE FOR ONTOLOGICAL DUALISM

It must be understood that a defense of dualism involves an argument for two situations. In the first place, we must show that there are these two entities which we discussed above, and we must depict them in a way *to show that matter and mind are equally substantial*—that is, that the one can exist without the other. In the second place, we must show that although these two substances are mutually exclusive reals *there is interaction between them.* Mind must be disclosed as influencing matter, and matter must be revealed as affecting mind. Let us consider, first, the argument that there are two independent substances like mind and matter in reality.

1. **Dualism as a theory of two distinct substances.**—That there is a world outside and a realm inside is a conviction found in the thought of the illiterate and the learned alike. From the beginning of cultural history, man has treated the world as having one stuff which is physical, extended in space, possessing inertia, having mass, and capable of being perceived and measured. On the other hand, he has also persistently thought that reality contains also a substance which is non-physical, non-spatial, self-active, imponderable, not susceptible to sense perception, and not reducible to any sort of measuring standard. How has he come to believe that there are these two elements in reality?

First, *how does man know that there is an objective world outside of his experience?* Ask this question of a man in the street and he will reply, perhaps with some contempt at the absurdity of your question, ''How do I know that things are out there? Why, I see them.'' To the ordinary man, seeing is believing, and sense perception always carries with it the token that things perceived are ''out there.'' The naïve individual is psychologically right in holding that sense perception has objective reference. In perception we do have knowledge *of,* and *about,* something. In sense perception we are, as knowers, brought in contact with knowns, which are altogether independent for their being upon being known.

In other words, we are all realists in our notions of sense perception, treating the content of perception as a realist always does, as, in its existential nature, independent of, and external to, mind. Not only do our perceptions bear testimony in themselves that there is an external world, but the way in which they reinforce each other gives us the right to believe that in perception we are in touch with physical, external stuff. If we see a diamond on our desk, we may have some doubt about its objectivity, but if the diamond we see can also be felt and can be made to make a scratch on glass, then we come to the conclusion that by all the rights of circumstantial evidence, the diamond is not a fiction of imagination, not an illusion, but an actually existing, external, non-mental thing.

If we are still in doubt and do not wish to trust this combination of private evidences, we can ask other persons whether they perceive the diamond on the desk or not. If they agree that they perceive the diamond, then to deny its objective status would be pure foolishness. In other words the social character of perception is one of the chief reasons for believing that perceived data are not in individual minds but out in public space where whosoever will may perceive.

The argument for subjectivity also has a commonplace and common-sense ring. Indeed, dualism is the ontology of common sense and, as such, possesses the obviousness as well as the naïvety of a common-sense view in any field of thought. Ask the man in the street whether or not there is such a thing as mind, and he will answer at once, ''Of course.'' And if you ask him how he knows it, he will say, ''I feel, I think, I hope, I have pain, I remember.'' He knows that in experience there is not only the experienc*ed* side, but there is also the experienc*ing* feature. He is aware that there is an *activity* as well as a *content* in experience. He recognizes that his mind is the subject of knowledge, as he recognizes that the physical thing is the object of knowledge.

We become aware of mind in moments of mystical intuition, when we introspect and contemplate, when we do not pay attention to outward facts. Perhaps one reason why there is such an emphasis upon the physical world to-day is that we so seldom get away from material stimuli in order, in quietude and detachment, to enjoy and evaluate the personal, private, and subjective elements of experience. It is small wonder that many modern business men and contemporary scientists, engrossed as they are in the sphere of impersonal materials, are dubious concerning the validity and utility of such entities as soul, mind, or spirit. It is, after all, the artist in a moment of creative originality, the convert in the mood of exaltation, the mourner in the grief of a tragic calamity, who recognize and appreciate the reality of spiritual and mental entities.

Another feature of our experience which testifies concerning the existence of a subjective internal realm of being is the actuality of imagination, reproductive and productive. A building may be completely demolished in an explosion. As a public stimulus or as a physical object occupying space, it would then, of course, be no more. But the building, in spite of its physical disappearance, would continue for a long time to exist as an image in the memory of those who had been familiar with it.

Not only do imagined experiences which reproduce and preserve our impressions of physical objects argue for the necessity of mind, but imagined experiences which represent no outside physical object make inevitable the belief that there must be some realm in which centaurs, round squares, blue beards, and fairies must dwell. Of course, there are those who say that these contents of experience, which represent either false knowledge or creative knowledge, have their being in a logical realm called the *level of subsistence.* The new realists have this view. The realist's notion of subsistence, however, seems to us to mean, in spite of a new terminology, just exactly what has traditionally been known as mind.

Finally, there is evidence for mind in the world at large as well as in human selfhood, in the manifestations of purpose and adjustment in the world. We have already discussed this argument for mind in our treatment of teleology and need not tarry longer with it here.

2. Dualism as a doctrine of interactionism.—The evidence for interaction between mind and body is, like the evidence for objective matter and subjective mind, obvious to common sense. That our bodies are affected by our emotional, volitional, and intellectual states is a truth recognized with but little psychological inquiry. We all are aware how men in moments of great passion, enthusiasm, and purpose have accomplished ends which under ordinary psychological circumstances would be too exacting and difficult for their physiological apparatus to perform. Again, we all know from personal experience how the physiological condition of the body is registered in the condition of our mind. We all know how hard it is to study when we are hungry, tired, or sick, and we are all acquainted with the fact that narcotics and drugs stimulate or retard the flow of ideas.

Of course, our interest here is in ontological psychophysical interactionism, not in psychological psychophysical interactionism. We shall remark concerning psychophysical interactionism later in our discussion of the body-mind problem. But the interaction between the mental and material features of the human individual is significant of the relationship between the spiritual and physical departments of the world at large. In the cosmos as a whole the interaction may be said to exist between God and nature. God, as the cosmical mind, sustains and organizes nature, as the cosmical matter, while nature, in turn, provides the stuff in which the divine purposes are realized. The development of the universe is the process which results from the interrelationships between these two cosmical principles.

C. The Case Against Ontological Dualism

In the *first* place, we seem to have an intuitive dislike for any philosophy which does not treat the world as a unity. Philosophy has traditionally lured man into believing that the outcome of reflection must be a theory which portrays reality as fundamentally one substance. Consequently we are likely to think of dualism not as an ultimate philosophy, but as an early stage in speculation which presents opposing points of view with satisfying clearness, but which finally must give way to a stage of thought in which these antithetical outlooks are resolved into one synoptic and reconciling system.

A *second* argument against dualism relates to the difficulty of explaining how any interaction can occur between mind and matter. We can not possibly conceive how a substance which does not have any mass and which does not occupy space can affect in any way a ponderable and space-occupying stuff. Equally inconceivable is the possibility of a thing with volume manifesting any influence in a realm where volume is not found.

The dualist will reply to this criticism that the inconceivability of any interaction between mind and body is not a statement which proves that interaction is impossible. It is rather a statement of the difficulty of explaining interaction. And generally the dualists have admitted their inability to explain interaction, insisting at the same time that in all philosophies there are certain concepts which must, because of the limitations of finite minds, seem inexplicable. The dualist will point out, furthermore, that many notions, once thought incomprehensible, have with the passing of time and the increase of knowledge become reasonable and clear.

The *third* criticism against dualism is levied by those who are concerned to regard the conservation of energy theory as strictly applicable to the physical world. The conservation of energy theory holds that the energy in the world has been eternally the same in quantity. The form of energy may vary, but the amount of energy in the physical world must remain constant. This theory must be held, its adherents assert, if we are to arrive at any equations which can be used to predict and control nature. If there is more energy in the world at one time than at another, this would mean that there would be more in an effect than in a cause, or more in a cause than in an effect. Scientific explanation, therefore, would involve instance after instance of unexplained and mysterious phenomena.

This is just what would happen, say the critics of dualism, if the two-world system of the dualist were true. If the mental world were influencing the physical world, then there would be energy injected into the physical; or, if the physical world were acting on the mental world, energy would be lost in the process. In either case, the constancy of the physical system would be violated, and equations which would represent the material realm as uniform and determinable would be impossible.

The dualist will reply to this criticism that dualism conflicts with the notion of conservation of energy by asserting that the conservation of energy theory does not possess at all the importance attached to it by some of its exponents. It should be regarded as a working hypothesis relevant to limited fields of scientific inquiry, and should not be made a dogmatic description of the universe as a whole. The dualist, furthermore, will point out that the proponent of the conservation of energy theory, if he is completely to support the principles of physical phenomena, must entertain a tenet which is in conflict with the conservation of energy theory; namely, the second law of thermodynamics. According to this law, the motion, life, and change in the world are due to the fact that energy is passing from available forms, or parts of the physical world in which it is in superabundance, to non-available forms, or parts in which it is deficient in amount. The outcome of this flow of energy would be a state of equilibrium in which energy would be distributed equally in all parts of the physical system. When the stage of equilibrium is reached, there will be no more motion, life, and change. In short the second law of thermodynamics presents a universe that is running down.

Now, says the dualist to his critics, "How are you going to reconcile the two ideas, both of which you hold; on the one hand, that the universe is eternal, and, on the other hand, that it is running down?'' The dualist will declare, ''If you want to keep your physical universe as a machine, and, if you want to keep it from running down, you must replenish the energy constantly being dissipated by ingresses of energy from another world outside of the physical sphere.'' This creative source of energy, to the dualist, is the world of mind or spirit, the realm which sustains the world of the physical.

The final outcome of this discussion of dualism, from our standpoint, would be thus: that the dualist is right in so far as he sees the need for a motivating principle, for an organizing power, and for a value effecting force in reality. Mind seems to be the only concept which legitimately accounts for these features in the real world. Moreover, the dualist is right in insisting that the mind characters must have something to work in and on. This stuff which is motivated, organized, and enhanced through the participation of mind is matter. The dualist is at fault in separating these two features, mind and matter, into two mutually exclusive realms which by no intelligible explanation can ever be conceived in interaction. The dualist is also wrong, we believe, in treating mind and matter as equally real and as equally important. As we shall see later, the level of mind seems to be more real and more significant than the realm of matter, although the latter need not be considered as dependent on the former for either its being or its importance.

III. Ontological Materialism

Materialism, as we shall discuss it in this section, is an ontological theory which, for the most part, has lost its unique pertinence. The arguments which we shall present for and against materialism relate largely to a doctrine of matter no longer held. It must be pointed out that to be a materialist in the ontological sense carries with it no disgrace. It does not mean that the materialist is subject to baser moral interests than those which concern the idealist. The common use of the word *materialism,* as referring to a concern for the physical features of human nature and human conduct, is ethical materialism, or better *hedonism,* a point of view with which we are not now concerned. The materialist, as an ontologist, has never denied the importance of meanings, values, ideas, faith, and personality in the world. He has only insisted that these entities are qualitatively matter, or at least that they depend for their being upon processes which are material.

A. Kinds of Ontological Materialism

In Chapter IX the historical views of matter were discussed. The various notions of matter, from the atomism of the ancients to the atomism of our contemporaries, were presented. Our present concern is not to develop further the different conceptions of material substance, but to indicate the different world views which emerge out of the various ideas of matter.

Two chief types of materialism are distinguishable: *metaphysical* materialism and *methodological* materialism. The first is the traditional materialism, and is often known as *naïve* materialism; the second is a recent materialism and is sometimes called *sophisticated* materialism. Let us notice each of these theories in more detail.

1. **Metaphysical materialism.**—This type of materialism has historically been known as *atomism.* Its exponents have believed that the world, as a whole or in its particular items, is interpretable in terms of mass particles moving in a void. The motive behind the theory has been the interest to view reality apart from any moral or personal presumptions—to employ a purely objective method of investigation. All desire to locate divine agencies or purposes in the world is absent from the atomists' thinking. Together with the impersonal attitude, is the zeal to ex-

plain the complex in terms of the simple. The atomists have always been insistent in the belief that *analysis* is the way to truth. Many important names are included in the school of the atomistic materialists: Leucippus, Democritus, Epicurus, Lucretius, Hobbes, Gassendi, Condillac, Helvetius, Priestley, Cabanis, Diderot, La Mettrie, and Haeckel.

According to this kind of materialism, the material particles which make up the world are hard, impenetrable, swiftly moving entities. These entities are very minute, and of different shapes, but qualitatively they are of the same substance. The different qualities of objects are accounted for by the different combinations of these qualitatively identical particles. The combinations occur by chance, as the particles move about in empty space. All qualitative differences are thus reduced to quantitative variations. The only difference between pleasure and pain, man and beast, personality and electricity, is the difference in the number and configuration of the atoms which constitute these various things.

This view is elemental, to be sure. It has been replaced in modern thought by a more sophisticated form of materialistic doctrine.

2. **Methodological materialism.**—This type of materialism is even more concerned with analysis than naïve materialism. In fact, it has discovered that the atom can be analyzed into simpler states of being than itself. The result of this more rigorous analysis has been the development of the electron-proton theory of matter. This doctrine has already been discussed, so we need not examine it here.

The metaphysical materialist is interested in the *what* of matter; the methodological materialist is concerned with the *how* of matter. The methodological materialist knows the exact structure and behavior of the atom. The old materialist was interested in the ''substantiality'' of the atom; the new materialist is interested in the ''performances'' within the atom. Recent materialism has learned, through the discovery of radioactivity, that matter is not made up of static entities but of changing and developing elements. The mechanical framework of the traditional materialism has had to be replaced by the notion of a dynamic universe. Matter has even been found to be transformable into energy. The term *energetics* is more appropriate than *materialism* in naming the recent conception of the physical world. In the development of the new theories of matter certain thinkers have been preëminently influential: Kelvin, Helmholtz, Poincaré, Michelson, Ostwald, Lorentz, Röntgen, Eddington, Whitehead, Einstein, Bolin, Miller, Millikan, Mme. Curie, Compton, Bridgman, Heisenberg, Fitzgerald, Maxwell, Minkowski, Planck, Schrödinger, Russell, Thomson, Rutherford, and Moseley.

Let us now consider the case for and against materialism. Whether matter is composed of the hard, separate, impenetrable particles of *atomism* or of the intricate, dynamic, tenuous particles of *energetics,* the motive of old and new materialism is fundamentally the same. Both doctrines agree that complex, concrete, qualitative beings are best explained in terms of simple, abstract, quantitative entities.

B. Arguments for Ontological Materialism

What arguments does the materialist present to substantiate his belief that all features of reality, the spiritual, the mental, the living, as well as the chemical, can be interpreted in terms of mass particles in motion?

1. **The correlation between psychical function and physical structure.**—In the first place, the materialist points out that we know of no mental life which is not correlated with the physical process or as the notion is put in adage form, ''no psychosis without neurosis.'' The dependence of consciousness upon brain activity is a well-known observation, and the materialist uses it to suggest that without an

active brain or nervous system conscious states would be impossible. The materialist reinforces this notion that mind is a by-product of matter by pointing out that in the history of living organisms the lower types of being from the standpoint of consciousness are always those which also have the simplest and most rudimentary forms of nervous structure.

2. **The scientific character of materialism.**—The materialist also supports his contention by asserting that his theory is in line with scientific principles and practice. To treat mind as a form of physical energy is to save the conservation of energy theory. The materialist holds that it is as legitimate to believe that energy can take the form of mind as that it can take the form of heat, motion, or electricity. The materialist insists, in his desire to be scientific, that a view of mind which makes it different from other energy, which makes it unique, puts it outside the realm of scientific discussion and practical control. To characterize mind as metaphysical, or in a class by itself, is to give it a status in which it accounts for reactions in the world which can be accounted for on other grounds. To say that mind is necessary to account for the wondrous organizations in nature or for adaptive responses of the physiological organism is to overlook, says the materialist, the fact that these phenomena can be explained wholly in terms of physical causes. In other words, the assumption of mind as a causal agency in the world violates the law of parsimony, the principle that theoretical explanations for events should not be multiplied beyond necessity. Finally, the materialist insists that he is on the side of science in that he is not afraid of facts. He is concerned to predict and control nature, and, because of this interest, he desires to observe reality as it actually is. Materialism, therefore, its exponent declares, commendably avoids all interpretations of the world in which pious hope and romantic sentiment impede the examination of things as they are. The materialist exalts the zeal to disregard the satis-

factions of private selfhood in the attainment of external, impersonal truth.

C. ARGUMENTS AGAINST ONTOLOGICAL MATERIALISM

The opponent of materialism has a reply to each of the above contentions.

1. **The case of correlation between the psychical and the physical.**—The anti-materialist argues that the materialist proves nothing against mind by saying that there can be no mind activity without body activity. Mind, without body, would, of course, be a mind with which we could have no communication. But to say that mind would be non-existent is to go beyond the knowledge we possess of the situation. We do need nervous systems to have consciousness, but to identify the mental life with physical processes is not a necessary or inevitable procedure at all. We cannot have photographic pictures without a camera, but the pictures are not the camera. It is just as legitimate, on the basis of logic, to affirm, because of the correlation between mind and body, that body is as dependent upon mind, as mind is dependent upon body. Furthermore, the argument that there is a concomitant variation between the complexity of nervous system and the proficiency of consciousness in the evolution of life may indicate just as truly that matter depends upon the mind, as the reverse.

2. **Concerning materialism as scientific.**—The materialist of the old school stressed the fact that his theory was consistent with the conservation of energy theory. We have mentioned in previous discussions that the conservation of energy theory is no longer given the high position it once held among the assumptions of physical science. The new materialist is willing to supplement, if not replace, the category of conservation with that of creativity. This attitude on the part of recent materialists really means that present-day materialism is an entirely new doctrine, perhaps more akin to certain idealisms than to the historical materialisms.

We may be inclined to agree with the new materialist that mind is a form of energy, just as heat, or motion, is a form of energy. We are restrained from the acceptance of his theory, however, by the fact that mind energy has never been measured in terms of any units of physical science. In the realm of the material, foot-pounds, dynes, ergs, etc., tell the story of successful measurements. But no such units of measurement apply in the realm of mind. Even the intelligence tests of psychology are ''performance'' tests, and only by inference can they be regarded as estimates of the subjective mind.

As to the law of parsimony, this principle is admittedly valuable in arriving at simple explanations of objects and events. But simplicity is no satisfactory criterion of truth. Quantitative considerations of nature are useful in the procedures of prediction and control, but for a complete interpretation of reality, qualitative discussions are always necessary. To explain reality by reducing the concrete level of personal values to the abstract level of impersonal quantities is to explain away the very object of one's explanation. The coherence theory, already discussed, is fundamentally right in its insistence that ''the truth is the whole.''

The anti-materialist is not convinced by the materialist's boast that he is not afraid of facts. The idealist may incorporate sentiment into his interpretations of reality, but this process provokes in him an attitude of adventure and fearlessness which often results in martyrdom. The men and women who, for love of a cause, face the trials and dangers of jungles, forests, and frigid waters cannot, by any means, be called fearful of facts. The materialists themselves, moreover, have an emotional bias. The passion for facts, the zeal for system, the concern to find all particulars explained in one all-inclusive substance, the eagerness to reach the ''ultimates'' of analysis, are all evidences of the power of emotion in the thought-life of the materialists.

Words of caution need to be stated before we conclude our treatment of materialism. We have already suggested that criticism against materialistic theory is motivated largely by hostility to a doctrine no longer accepted. The old antagonism to matter was aroused by the feeling that matter, as a hard, stubborn, meaningless stuff, was a constant obstruction to the realization of good in the cosmos. Matter is now, however, no longer *solid.* It is no longer regarded as a substance which eternally persists, occupying but one place of space at one moment of time. Matter is now constituted, not of *entities in space and time,* but of *particles of space-time.* The space-time out of which matter is constructed is of the most abstract and diaphanous character—simple, qualityless being. The particles, or units of action, in which space-time manifests itself are transient; they appear and disappear. But in their activity they effect a series of events which we experience as material objects. For the recent physics matter *really* is non-matter in motion. Two comments are worthy of notice with respect to this dematerialization of matter. In the first place, although the explanation of the world purely in quantitative terms does not satisfy man's speculative concern for the concrete, it is, nevertheless, a procedure highly useful in the controlling of nature.[2] We need to remember that the new discoveries of physics are not contradictions of matter as it has always appeared in the common-sense experience of man. Mathematical physics is an analysis of material objects as they appear to us daily in ordinary perception. That, fundamentally, material bodies may be reduced to electrons and protons, even to event-particles, is interesting from the standpoint of wonder, and useful from the standpoint of technology, but, after all, the average man will have to deal with the same sort of world as that which his ancestors faced thousands of years ago. In the next chapter we shall discuss the pluralistic ontology of the new realists, in which the world is regarded as fundamentally an aggregate of simple, qualityless entities.

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[2] See Russell, ''The ABC of Relativity,'' p. 230. (Harper & Bros., 1925.)

The second note of warning with regard to recent physical discoveries refers to the religious implications involved. On the first impression, the reduction of matter to non-matter and the emphasis on the creativity of the ultimate events in nature seem to suggest new evidences for spirituality in the cosmos. In the realm of electrons there is a spontaneity, an indeterminism, a creativity, but it is a far cry to infer from these features the presence of a spiritual personality in the electronic system. As J. Arthur Thomson has advised, ''We must avoid a mistake sometimes made to-day by well-intentioned people. How tenuous, some say, has the material screen become that separates us from the spiritual order. This is surely away from the line of truth. The spiritual is not a reality that will be made more accessible by any thinning or etherealization of matter. It is spiritually discerned.''[3] After all, according to the new physics, it is not only matter, but also mind, and even personality, which may be reduced to the simple ultimates of space-time events. Mathematical physics does do away with the substantiality of matter, to be sure, but it also regards the ultimate nature of spirit in a similar, abstract way. But, if the new physics cannot be taken as a spiritual interpretation of reality, it has brought to the modern interpreter, to use the words of R. A. Millikan, ''a wholesome lesson of humility, wonder and joy in the face of an as yet incomprehensible physical universe.''[4]

IV. Ontological Idealism

The third ontology which we have to consider is that of the idealistic school. An idealist in ontology is one who asserts that the fundamental feature of the world is its idea aspect, its meaning, its value, its purpose. The materialist regards the fundamentally real as mass particles in space. The order and purpose of these physical components are found only in the theories of the scientists who study the physical realm. For the materialist, laws and principles are components of knowledge and not states of affairs out in the world independent of the knower. The idealist, on the other hand, does not emphasize the stuff of the world so much as he stresses its design and structure and worth. He finds that the universe has, in itself, a *lawful* character. Laws are not merely epistemological conceptions in knowing beings. They are characteristics which are in the cosmos, independent of any knowledge of them.

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[3] ''Science and Religion,'' page 51. (Charles Scribner's Sons, 1925.)

[4] *Annual Report of Smithsonian Institution,* 1927, page 197.

A. Kinds of Ontological Idealism

We shall discuss eight types of idealistic theory. They will be the idealisms of eight different philosophers, namely: Hume, Plato, Berkeley, Leibnitz, Kant, Hegel, Schopenhauer, Lotze. Let us examine in turn the theories of these idealistic thinkers.

1. **Phenomenalistic idealism.**—David Hume (1711–1776) is not, in any sense, a full-fledged idealist. He is skeptical with respect to interests concerning which the traditional idealists have great zeal. Such matters as the objectivity of value, the cosmical character of laws, the supremacy of personality, and the reality of God are questions to which he definitely takes an agnostic attitude. He is idealistic, however, in asserting that the real world is the world of ideas and impressions. According to Hume we live in the realm of sense perceptions. Experience is completely constituted by our impressions gained through the end organs, and by our ideas, which are reflections upon our impressions. Ideas are copies of sense perceptions. There is a connection between our ideas, but this connection does not betoken any necessity, or causality, demanded by situations external to human experience. The idea of cause,

or the notion that there is uniformity between events, is due to the fact that our impressions and ideas follow a routine, or habit, in our own experience. The existence of objects independent of mind cannot be demonstrated. Hume avoids, however, a radical skepticism which denies the externality of physical bodies. His concern is to insist that they are only probable, and certainly not substantiated in the realm of experience itself, which is always subjective. In spite of his identification of reality with experience, Hume is better classed among the phenomenalists and positivists than with the idealists. Hume has no mind substance in his theory; mind is just a succession of impressions and ideas, associated together according to certain psychological laws (the laws of resemblance, contiguity, and causation). There is no reason why the experiences are called mental; they could as logically be called material, or neutral. His location of order in the private standpoint of individual knowers, furthermore, excludes him from membership in the main idealistic schools, which have always emphasized the universal and necessary character of orderliness.

2. **Mystical idealism.**—The idealistic theory of Plato (427–347 B.C.) has a religious tone. It is more esthetic than scientific. According to Plato, matter and mind are both existent in the world. In fact, Plato might with good reason be called a dualist. He is more appropriately called an idealist, however, because he always considers the mind aspect of world to be the dominating feature. Matter to him is the sphere of the mind's activity. Mind is the realm of ideals, which participates in the world of crude, stubborn, chaotic matter. Thus is matter made beautiful and meaningful. For Plato, matter is the world of *non-being,* and mind is the world of *being.* Being, to him, is the same as *meaning.* Meaning refers to the order, purpose, and value characters in the universe. His idea of the world is artistic or esthetic, and he finds his inspiration for his idealism in the orderliness of mathematics. The realm of

matter is being organized after the system of ideas—ideas which are arranged in hierarchy, with the idea of the Good, which to Plato is God, being the supreme and all-ruling idea. The goal of the idea of the Good, and all the other ideas as they participate in matter, is to bring forth a physical world in which the universal ideal will be realized in physical expression.

3. **Subjective idealism.**—George Berkeley (1685–1753) regards mind as more fundamental than does Plato in that Berkeley does not grant to matter any existence at all. Plato says there is matter, but he holds that matter doesn't "matter." Berkeley asserts that there is no matter at all. The only real world for Berkeley is the society of selves. The real world is made up of centers of knowing; the world of matter is just what these knowing beings know. Physical things are ideas in minds; they are the contents of consciousness. Berkeleyan idealism is thus called subjective idealism. Nature, for Berkeley, is the parade of ideas which appears to our experience and which we passively receive. The cause of these ideas and the sustaining ground for them, when finite individuals do not perceive them, is God. *To be is to be perceived,* according to Berkeley. This does not mean that ideas are less interesting, less vital, less influential, less permanent than the things of the materialist. It means, only, that they exist only in minds. What has been traditionally called *matter* is just an abstract term, to indicate certain combinations of sense experience. A thing is just a complex of qualities, primary and secondary, both of which are mental.

Berkeley argues for God as follows: he points out that we have some ideas which are creations of our own minds. For instance, the idea of a mountain of gold, or of a sea with purple water is possible only because a mind creates, through its own effort, such an object. Now there are ideas which we receive passively which are not the result of our own intellectual activity. These ideas must have resulted also from a mind. Inasmuch as they are so universal in scope and have such infinite implications, they must be the product of a divine mind, or God. Furthermore, inasmuch as the ideas which we receive without effort represent design and purpose, the mind which has caused them must be a rational and intelligent spirit. Thus he argues for a good and intellectually sufficient deity.

It is this idea of God, as the eternal source of ideas, which saves the subjectivism of Berkeley from being purely a positivistic and nominalistic doctrine. It is his postulation of many selves, divine as well as human, which saves Berkeley's theory from being a solipsism.

4. **Monadistic idealism.**—A third kind of idealism is that of Leibnitz (1646–1716). Leibnitz finds mind in the universe not as meaning or value, as does Plato, nor as the creative cause of ideas, as does Berkeley, but as the principle of activity. Mind to Leibnitz is evidenced in the dynamic and propulsive character of reality. Leibnitz regards the universe as constituted by an infinite number of energy centers. He calls these active entities *monads.* Each monad is independent from every other monad for its being. The monads are windowless and have no interaction either of a practical, or knowledge, character. Leibnitz believes in a physical monad. He does not agree with Berkeley that matter is just the content of mind. Matter, for Leibnitz, is activity of a very simple kind.

Leibnitz says there are two levels of being higher than matter. These are soul and spirit monads. Soul monads are not only active, as are matter monads, but they are also capable of including in present activity the activities of the past. In short, soul monads are body monads which possess memory. The highest level of Leibnitz's system is that of spirit. Spirit monads have, in addition to the powers of body and soul monads, the power of setting up ends. That is, they include future activities with the present and the past activities.

Leibnitz explains the harmony which exists between these different monads, or centers of activity, through the notion of a preëstablished harmony. God is to Leibnitz the governing monad, and the agreement between the different kinds of monads is due to the arrangement which he has made at the time of creation. In human selfhood the relationship between the physical and the mental for Leibnitz is that of parallelism, a theory concerning the body-mind problem, which we shall consider later. Leibnitz believed that the higher monads contained within themselves all the laws and activities of the lower levels. Consequently, to know oneself is for Leibnitz to know the principles of nature at large. According to Leibnitz, the monads are graduated in a continuous series in which there are no gaps between one level and the one immediately higher. Inasmuch as Leibnitz regarded the world as made up of parts, each one of which, material as well as spiritual, is a self, in which the monads are organized in a perfect harmony, and in which it is possible for a finite individual through introspection to ascertain the truth of reality as a whole, it is small wonder that he was an optimist and considered our universe the best of all possible worlds.

Similar to Leibnitz's theory of mind as the activity side of nature, is the doctrine of *panpsychism*. Panpsychism holds that there is mind in everything in the world. This theory differs from monadism, however, in maintaining that matter is not mere activity, but that in matter memory and anticipation appear, though, of course, in rudimentary and deficient character. Among those who are panpsychists, or hold to theories very similar to panpsychism, are Paulsen, Fechner, James Ward, and M. W. Calkins.

5. **Transcendental idealism.**—Another type of idealism is that of Immanuel Kant (1724–1804). Kant is, in a sense, a dualist. He may well be called an agnostic dualist. But the most significant feature about Kant's philosophy is the preëminence he gives to mind. There is an independent realm outside of mind for Kant, the realm he calls the

thing-in-itself. But, for Kant, this world is never known as it really is, because, in getting into intellectual contact with it, we always interpret it after the form of our own knowing process. We clothe it with space and time character, but space and time are intuitions of the mind, ways in which our sense perceptions must necessarily operate. We ascribe to this outside entity which is the object of our knowledge, causal relation, qualitative character, quantitative distinctions, and other properties. These properties, however, represent the influence in our knowing of the categories of the understanding. The world of science, for Kant, is a world of phenomena, a world of human experience. He has also, however, the transcendent world of such realities as God, freedom, and immortality. This real, or *noumenal,* realm, we reach, says Kant, through postulation and inference.

6. Objective idealism.—The idealism of Georg Wilhelm F. Hegel (1770–1831) is one of the most influential doctrines in modern philosophy. It regards the universe as mind because the universe is a unity. The world is the expression of cosmic reason in the form of nature. Hegel takes his standpoint that reality is a systematic whole from the social and historical sciences. He uses the development of culture as a revelation of the absolute or universal idea. Not in physical nature, which, however, is a part of reality, but in mind, is the character of the cosmos disclosed. He affirms that there are three types of mind: subjective, objective, and absolute mind. The third named above represents reality because it alone possesses the comprehensiveness and internal consistency significant of truths.

For Hegel truths must be the expressions of the universe in its entirety. It must be the experience which the cosmos, as a self-conscious being, eternally possesses. The subjective mind is inferior, because it is contradicted by other subjective minds. It possesses the defect of partiality and finitude. In the subjective mind are the deliverances of instinct, passion, feeling. The objective mind is more indicative of true reality because it has less of contradiction and is wider in scope. Objective mind is revealed in social customs, institutions, and laws. The absolute mind, which is the mind of the absolute self, is disclosed in art, religion, and philosophy. These disciplines of thought are true because they contain the universal idea and thus relate to propositions which are true throughout the world in all space and at any time.

For Hegel the way in which the truth is being realized is called the *dialectic process.* The world, as a whole, is a perfect being, but this perfection is possible in the whole only because there is opposition and growth in the parts. Throughout the cosmos the dialectic process manifests itself in the achievement of syntheses, which are the outcome of theses and antitheses in contradiction. The synthesis realized then becomes an antithesis or some other thesis, and the conflict between them becomes the productive sphere for a more complete synthesis. The Absolute, or God, is the all-inclusive and final synthesis in which all the subsidiary dialectic processes find their ultimate reconciliation. God is *being-in-and-for-itself.* He is the *Absolute,* eternal, all-comprehending Spirit, or Self.

The dialectic process, as presented in Hegel, is anticipated in the theories of Heraclitus, Zeno, Plato, and Kant. But the immediate predecessor of Hegel in developing the conception of dialectic was Johann Gottlieb Fichte (1762–1814). For Fichte, the best interpretation of reality is to be found in the struggle between the *ego* and the *non-ego.* His doctrine is based on ethical presuppositions. Matter, to him, is that which thwarts the moral will. Freedom comes with the victory by means of, yet over, this realm of nature which impedes man in his ethical endeavors. The universe concerns itself with the developing and sustaining of the finite wills which, in their struggle against matter, realize the cosmic will.

Recent philosophy has been greatly influenced by thinkers who have sought to substantiate and elaborate the

Hegelian notions of unity, dialectic, personality, and reason. Among the outstanding exponents of Hegelianism in recent years have been T. H. Green, Edward Caird, F. H. Bradley, Bernard Bosanquet, H. H. Joachim, Josiah Royce, M. W. Calkins, J. E. Creighton, G. P. Adams, and J. A. Leighton.

7. **Voluntaristic idealism.**—Arthur Schopenhauer (1788–1860) is the chief representative of this idealistic conception. He held that reality is psychical in the sense that it is the scene of continuous strife and struggle. *Will* is the fundamental principle of being. Will, for Schopenhauer, is not a personal purpose. It is an unconscious impetus. The cosmic Will produces individuals, which, in turn, possess their own driving forces. The result of the appearance of these finite, particular wills is conflict and competition. The world is the worst of all possible worlds, a universe in which pains are far more abundant than pleasures. Happiness can only come through the negation of the will in man. Man has an escape, however, from the suffering which nature imposes. In contemplation, serene intellectualism, and artistic perception man is freed from the domination of the evil-producing will. We shall have more to say regarding Schopenhauer when we discuss the problem of pessimism.

A philosopher whose view of reality has much in common with that of Schopenhauer is Friedrich Nietzsche (1844–1900). Nietzsche, however, does not repeat the note of resignation in Schopenhauer's theory, but instead exalts will as a force making for life and power. The time key to reality is disclosed in the propensity of biological nature to produce the superman. The most excellent type of being is to be found in the courageous, intellectual aristocrat; in one whose life is the expression of the eternal *yea.*

Henri Bergson (1859–) is another man whose view of reality presents driving force as fundamental. Evolution is a process in which the cosmical vital impetus, or *élan vital,* is striving to express itself in and through the resist-ing forces of matter. Unlike Schopenhauer and Nietzsche, Bergson finds in the movement upward of the great impulse the activity of God. God is life itself, bursting through and beyond matter and mechanism to effect the vitality of plants, the instincts of animals, the intelligence of man. Intelligence has arisen to aid man in the control of nature and in the communication of his ideas, but in *intuition* man finds revealed the true dynamicity of reality.

8. Personalistic idealism.—Personalism is the ontology which finds its first important statement in the writings of Hermann Lotze (1817–1881). Its present important place, however, is due to the influence of B. P. Bowne (1847–1910). Others who have followed Lotze closely are: Rudolph Eucken, C. Renouvier, E. S. Brightman, R. T. Flewelling, L. W. Stern, W. R. Sorley, and James Ward.

Personalism is very similar to the subjectivism of Berkeley in that it is pluralistic, and religiously motivated. There are two differences, however, between the two doctrines. The subjectivists and the personalists both treat personality as the center of existence. The subjectivist, however, thinks of a person as independent of the experiences which the self has. For Berkeley the self is a separate individual being, which obtains and creates experiences. For the personalist the self is not a metaphysical ego independent of mental contents, the self is just the experience. Our personalities are our consciousnesses and not containers of feelings, ideas, etc. For the personalist, mind, or consciousness, is the datum of knowledge, and notions like *self* and *nature* are derived from a study of the datum itself.

The second difference between personalism and Berkeleyanism lies in the fact that personality is more realistic for personalism. The physical universe does have an existence outside of mind. It can never be included in mind, but mind can know it and thus have an experience of it. Lotze, the first of the personalists, was so zealous to exalt personal experience as the only kind of true reality that, in his interest to vouchsafe the world of nature, he endowed entities low down in the process of evolution with rudimentary feeling and volition. The value of personalism lies in its insistence, against objective idealism, on the freedom, value, and independence of individual selves, while maintaining, at the same time, the possibility of communication and coöperation between them.

B. The Case for Ontological Idealism

Whether or not idealism is a legitimate theory of reality depends largely upon the validity of the assumption that *to be is to be perceived,* or upon the assumption that *to be meaningful is to be unified,* or upon both of these assumptions. Whether or not these assumptions are justified is a matter which can only be solved by investigating, not the qualitative, but the quantitative character of reality. We are led to ascertain whether singularism or pluralism is the more adequate ontological standpoint. We are brought, in estimating idealism, to the question as to whether relations are internal or external. The recourse which the idealists have in justifying their theory by the internal theory is a topic which we consider in the next chapter.

C. The Case against Ontological Idealism

The realists of recent years have been the chief opponents of idealism. They have attacked idealistic theory by seeking to show that pluralistic logic, rather than singularistic logic, is the fundamental pattern of reality. The arguments which the realists use against idealism are presented in the following chapter.

As was suggested at the beginning of the present chapter, there are two ontologies which seek to avoid the difficulties of dualism, while retaining, at the same time, the advantages in both materialism and idealism. Let us observe what these two ontologies are.

V. Combination Theories of Ontology

The two ontologies which incorporate within their conceptions both materialistic and idealistic tenets are the doctrine of *neutral monism* and the doctrine of *emergence.*

A. THE ONTOLOGY OF NEUTRAL MONISM

Neutral monists in ontology are those who assert that fundamental reality is neutral. By neutral they mean that it may be interpreted either as matter or as mind. It depends not upon the character of the substance itself, but upon the way we, from our knowledge of it, interpret it. To the holders of this view, the world is not to be described as mind and matter, or as mind in matter, or as matter in mind, but as mind-matter. To them the world may be equally treated as material mind or as mental matter. The difference of terminology expresses merely a difference in the method of approaching the subject. The doctrine is often called the *double aspect* conception, and is sometimes known as the *identity* theory. There is also an epistemological neutral monism, which affirms that in experience the object of experience has both physical and psychical aspects. R. B. Perry is an important exponent of the double aspect notion in epistemology. We shall notice the epistemological conception in our treatment of the body-mind problem.

In the history of philosophy Baruch Spinoza (1632–1677) stands out as the chief exponent of ontological neutral monism. Spinoza said that reality is one. There is only one fundamental being, namely, *substance.* God and substance are identical. Substance expresses itself in many attributes. Two of these, thought and extension, man's intellect can know. Thought, or mind, and extension, or matter, cannot be explained in terms of each other; they are not dependent upon each other; both find their reality and their independence in the cosmical substance. Although mind and matter are distinct aspects, substance is unitary, indivisible, complete.

The chief objection to neutral monism, an objection which applies to Spinoza's ontology, is that a substance which is only known by its aspects is never known for itself at all. Spinoza admitted this by acknowledging that God is beyond definition. The holder of the identity theory, in making mind and matter aspects of an unknown third substance, tries to explain things, comparatively intelligible, by a notion which has no meaning at all. Such a procedure is not profitable from the standpoint of esthetic appreciation, scientific technology, or religious satisfaction.

Before we leave ontological neutral monism we must point out that there is another type of neutral monism in ontology. It is not a qualitative discussion of reality, however, because it regards the ultimates of reality as mere qualityless quantities. The fundamental entities are neutral, not because they synthesize mind and matter and equally represent both, but because they are so abstract that they are void of both mental and material content. This ontology, purely quantitative, we discuss in the next chapter in our treatment of the *logicism* of new realism.

B. The Ontology of Emergence

The ontological doctrine of those who support emergent evolution recognizes the independent existence of mind and matter. The doctrine, however, treats the former as the product of the latter. Those who take this point of view do not think of mind and matter as being the only two substances which make up the world. What is generally known as matter would be, to them, a phase of reality which would include several distinct levels of being; what is generally known as mind would be, to them, inclusive of several separate stages of being. For the emergentist, mind and matter are not, as for the dualist, coexistent in time, or, as for the neutral monist, coequal in value. Matter is the potentiality of mind, and mind is the fruition of matter.

We have already presented in detail the conceptions of the outstanding emergentists, and, therefore, need not elaborate the standpoint here. It is clear that they find the fundamental meaning of reality not in *substance,* but in *process.* They are the modern representatives of the ancient philosopher Heraclitus (563–470 B.C.), who affirmed that the secret of the cosmos is revealed in the changing, not in the permanent.

VI. Comments in Conclusion

We have surveyed the entire field of ontological thought. What should our reaction be? We cannot but come to the conclusion that the world does have a twofold character. There are materialistic features of fact, and spiritual features of value. We need not, however, separate them, as in dualism, nor blend them, as in the double-aspect theory, nor treat one as the product of the other, as in emergence, nor deny one or the other, as in materialism and idealism. Reality is not a neutral stuff supporting and manifesting physical and psychical features. Reality is the unification of the material and the mental, but it is a unitary system in which the unique function and nature of each aspect are conserved.

The distinction between mind and matter is not due to a difference of perspective. The mental and material are not simply two ways of viewing a neutral reality. They are significant of two distinct, but united principles in the cosmos. Mind represents the indefinable, progressive, ideal character of reality. It suggests the striving and advancing features of the world. Mind effects relations between events and things in the realization of a cosmical order. The way to a knowledge of mind is through introspection, intuition, hope, love—in short, through the romantic and speculative procedures of idealistic thought.

Matter, on the other hand, represents the definable features of reality. It suggests the permanent and existential aspects of the world. Matter is significant of the items brought together through the relating and organizing powers of mind. Matter is known by observation, experiment, analysis, extrospection, and abstraction—in short, through the technique of knowledge employed by the materialists.

From the standpoint of materialism, the world is pluralistic and purposeless; from the point of view of idealism, it is singularistic and spiritual. The former is interested in actuality; the latter, in ideality. In what notion do we find the two concepts reconciled and synthesized? The answer is—in the idea of personality. To use a poignant declaration of J. A. Leighton, "Reality is a psychophysical individuality."[5] From the standpoint of the present work, therefore, *to really be* means always *to be a self.* In identifying reality with personality, we seek to interpret the fundamental being of the world in terms of the most comprehensive and concrete concept presented in philosophical speculation. The implications of this ontological interpretation will, however, have to remain unexamined until we take up the problems of personality in chapters still ahead.

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[5] "Man and the Cosmos," p. 377. (D. Appleton and Co., 1922.)

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Chapter XIV

THE QUANTITATIVE NATURE OF THE REAL WORLD

WE ARE now ready to discuss the second ontological problem; namely, the question of the quantitative nature of reality. Is the world one or many?

This question can be answered from two points of view. We can say that the world is singularistic in quality; that is, that the world is one in stuff. We can also say that the world is singularistic in quantity; that is, that there is only one of that stuff. We prefer to reserve the term *monism* for a doctrine of ontology which is singularistic both as to quality and as to quantity. We can have singularistic pluralisms such as Berkeley's point of view—one in quality (all reals are selves), but many in quantity (selves are many). We may also have pluralistic singularisms as in the doctrine of emergence, in which, as in the case of Alexander's theory, there are many independent types of being, but all are unified into one cosmical progressive process. A singularistic singularism, or monism, would be illustrated in such conceptions as that of materialism, which treats everything as fragments of one all-inclusive ether; or that of Hegel, to whom all things are interdependent constituents of the Absolute. Spinoza's ontology, which makes matter and mind attributes of the substance God, is a singularistic singularism.

Pluralism naturally includes any dualistic ontology, because no dualism would be singularistic, either in quantity or in quality. In this chapter, however, we are concerned, not with dualism, which has already been fully discussed, but, along with singularism, with a pluralism which represents the universe as constituted by a great number of discrete and self-existent entities.

We shall discuss this problem under three considerations: First, the general controversy between singularism and pluralism—that is, a discussion of the meanings and arguments of both theories. Second, a treatment of the problem of relations, and a consideration of the controversy between the internal and the external theories of relations. Third, the conflict between the singularists and the pluralists as it was manifest in the medieval strife between the nominalists and the realists.

I. The Nature of the Issue between Singularism and Pluralism

Before attempting to examine critically the debate between the singularists and the pluralists, it would be well to define the positions which they respectively maintain.

A. Definition of the Terms Singularism and Pluralism

Let us notice first the main notions of the doctrine held by the singularists.

1. The meaning of singularism.—Singularism is the ontological theory of those who hold that the world is all of one piece, that the universe is, in the language of William James, "a block universe." According to this point of view, everything in the world is what it is because everything else is what it is. Nothing exists to itself alone. The singularist is one who says that the part always possesses the nature of the whole. To the singularist, men are known by the company they keep, and a company is known by the men it keeps. The singularist affirms that to know any one thing in the world, one must know all its interrelations, its ramifications, its connections throughout. Consequently, the answer to the question as to what man is, would be the same answer as we receive to the question what a tree is. For the ultimate answer to both these questions would be the same: a statement of what the universe is. The following lines from Tennyson are often quoted to show the meaning and motive of singularism:

> Flower in the crannied wall,
> I pluck you out of the crannies,
> Hold you here, root and all, in my hand.
> Little flower—if I could but understand
> What you are, root and all, and all in all,
> I should know what God and man is.

In the history of thought Parmenides (about 500 B.C.) stands out as the chief of the singularists. Parmenides held that God is everything. God is Being itself. Being alone exists, and Being is eternal and unchangeable. Motion, plurality, and growth are not found in reality; they are human illusions. There are no empty spaces in the universe; the world is in one piece. The realm of being is not other than the realm of thought. In the real world true being and true thought coincide; they are identical. Opposition of any type in the world is merely the evidence of human ignorance. The universal One is without contradictions and without parts.

Plotinus (204–269 A.D.) is also one of the leading singularists in the development of philosophical culture. The singularism of Plotinus is that of pantheism and mysticism. For Plotinus God is the universal One. Nature is an emanation from him, a diffusion or overflow from his being. Nature will eventually return to God; in the divine reality, nature will again be reabsorbed. The highest good of man is the loss of one's own individuality in union with the perfect Absolute. Parmenides found truth in the intellectualism of rationality; Plotinus found truth in the irrationality of emotionalism; both agreed, however, in the absolute unity of reality.

In recent philosophy the chief expression of singularism has been in the theories which find their authority in the doctrines of Hegel. The Hegelian movement combines the intellectualistic motive of Parmenides and the intuitive insight of Plotinus. Our criticism of singularism, therefore, will be directed toward singularism of the Hegelian sort. As was promised in the last chapter, our estimate of singularism will serve as an evaluation of modern idealistic theory.

2. **The meaning of pluralism.**—Pluralism is the theory that the world is not a unified system. The universe is not a *uni*verse but a *pluri*verse. According to pluralism, we are here because we are here, not because somebody or something else is here, was here, or will be here. The singularist believes that synthesis is the only method for attaining truth. Truth to him is never attained by an analysis which separates things from other things, or which breaks up a thing into its parts. Singularism goes with mysticism and rationalism, and as we shall see later, with medieval realism. Pluralism thinks of truth as being revealed in the part. The slogan of pluralism, like that of Cæsar at war, is ''divide and conquer.'' Pluralism believes in specialization and manifests the feeling that it is better to deal with controllable and measurable parts than to delve into contemplative and mystical wholes.

Pluralism represents a development in the history of philosophy which was started by the ancient Greek atomists. Chief among these pluralists of antiquity was Democritus (460–370 B.C.). Democritus, as we have already indicated in our discussions of the material world, believed that reality can be explained in terms of very minute physical particles moving about and combining together in empty spaces. The qualitative nature of these small bodies, called *atoms,* is the same in all of them. The growth and differences of things in the world are accounted for by the various combinations of these tiny particles. As we shall point out in the present chapter, recent pluralism, as presented in new realism, is the logical outcome of the analytical procedure employed by the Greek atomists.

Present-day pluralism is not wholly to be explained in terms of the rigorous use of scientific analysis. The procedure of seeking for simple ultimates does lead, of course, to the espousal of a pluralistic world. Pluralism is also found, however, in the thinking of those who are not concerned with carrying out radical scientific analysis. Pluralism is discoverable in the notions of those who have become irritated at the extreme sentimentality of the monists. Many pluralists to-day are those whose only reason for being pluralistic is an emotional hostility to the exaggerated optimism of contemporary singularists. They do not deny all connections and unities; they only deny the wholesale singularism of recent idealistic speculation. William James's pluralism is to be explained largely on this ground. James wanted a universe which would permit freedom, individuality, even chaos. Such a world appealed to his "tough-minded," robust temperament. And it must be admitted that he describes reality in a way to show that his view is based upon facts as well as upon personal desire.

B. Criticism of the Two Standpoints

Which one of these theories is the more adequate conception? First, let us consider the arguments for singularism.

1. **The case for singularism.**—The singularist believes, in the first place, that reality should be interpreted in terms of the highest cultural experiences in the individual and the highest cultural achievements of the race. If the world as a whole is betokened in our experience, we should find it depicted in our moments of artistic, scientific, philosophical, or religious insight, and not in terms of instinct, passion, discrete perceptions, and other similarly contradictory elements of consciousness. The most significant thing about these higher mental states is their manifest unity. Our mental constituents, in a scientific, mystical, esthetic,

or philosophical conception, are systematized and fused into one inclusive whole. Even our ordinary memory experiences have this feature of unity. Our present experiences are not added to our past experiences in any present datum. The past is present in such a way that the present is modified and transfigured as well as quantitatively enlarged. This alteration of any one moment of experience by other moments which it includes organically in itself, can only mean, says the singularist, that if experience represents reality at all, reality must be constituted by parts which interblend in the formation of one comprehensive totality.

Again, says the singularist, if we interpret the world in terms of mind, as it is revealed to us in social evolution, we must come to the conclusion that singularism is more significant of the nature of things than pluralism. The development of family life out of individual selves, of the clan out of the family, the tribe out of the clan, the nation out of the tribe, of an international system out of the separate nations, seems to indicate very convincingly that the motive in the evolutionary process is compatible with the principle of oneness and inclusiveness. The development in religion from polytheism to monotheism is another evidence of the dominance in reality of a singularistic motive.

The singularist supports his claim further by pointing out that, if the pluralist were right, the interdependence of the various disciplines of knowledge would be an unintelligible phenomenon. But if the world is one, then the dependence of psychology upon biology, biology upon chemistry, chemistry upon physics, is entirely rational. The singularist points out that not only are the sciences interdependent from the standpoint of each other, but they are interdependent also with esthetic pursuits, religious enterprises, and practical endeavors.

Another argument which the singularist presents is that his point of view is in keeping with the fundamental aim of philosophy, namely, the attainment of a unified and universal vision. Pluralism represents the beginning of philosophy. It is true with reference only to the naïve and common-sense notions which we entertain at the beginning of philosophical reflection. To end up with pluralism, says the singularist, is to acknowledge defeat and to proclaim the futility of the philosophical ideal. If the world is not a perfect systematic unity, then seeking for unity in our own experience becomes merely a technological procedure, valuable only from the standpoint of practical expediency and convenience. But if the universe is taken as one all-inclusive entity, then there is an incentive to push through and beyond the periods of present conflict and despair, to attain, in philosophical, scientific, religious, and esthetic reflections, a unity of mind, which, by virtue of its very world-representing character, will give us an enjoyable experience more satisfying than that incident to the satisfaction of solving any immediate practical problem. The singularist does not deny the validity of creative intelligence, as it deals in particularizing fashion with the immediate and exacting necessities of everyday life. He does insist, however, that man's glory and destiny are to be found in the awareness and appreciation of the principles, meanings, and values of events. Processes of solving practical difficulties are but ordinary and uninteresting expressions of laws eternal in their scope and personal in their origin. To the singularist, natural law, the very goal of scientific endeavor, would become merely a working hypothesis and the moral law merely an expedient rule for action, if the assumption of a cosmical order and reason be not accepted.

2. **The case for pluralism.**—Singularism, says the pluralist, leads to an attitude of despair, because the singularist says that before a man can know anything, he must know everything. Since he cannot know everything, then he can never know anything. The singularist replies to this criticism with the assertion that there are degrees of truth. He declares that he does not mean that, in a particular

situation, man must always find the whole truth. The partial truth may often solve the difficulty. What the singularist insists upon is that these theories which go no further than to provide a way out of an immediate exigency should not be given the pretentious name of truth. They should be called notions that are useful, enjoyable, or fruitful, rather than notions which are true.

The attitude which one takes in face of this fact, however, need not be one of despair or skepticism. It should, on the other hand, promote an attitude of wonder, reverence, and gratitude. Instead of lamenting because we cannot know complete truth, we may rejoice that in a universe as vast as our own, we can have as much knowledge as we do possess.

This attitude on the part of the singularist strikes the pluralist as being too pious. It betokens a spirit of resignation, of weakness. The pluralist wants man to be an individual, to face the universe boldly as one who snatches from it all its secrets and advantages himself of all its goods. To the pluralist, singularism seems to lead either to socialism or to absolute monarchy in political theory. It supports the point of view that the state is the main entity, that finite selves, or private citizens, are instruments in the ongoing and upgoing of the great societal organization. Pluralism, on the other hand, is in keeping with individualism in human relationships.

The singularists and the pluralists also are at odds in their theological opinions. The singularist espouses a theism which really merges into pantheism; whereas the pluralist endorses a theism which eventuates in humanism. The pluralist says that the singularist makes God so good that he is actually good for nothing. The God of singularism is so perfect, so self-sufficient, so independent, so all-inclusive that association with others than himself is unnecessary, if not impossible. To believe that a God so self-realized and consummate can appreciate the difficulties and struggles of ordinary men, is to believe a notion beyond warrant. The God of the singularist has power but no passion, law but no love, perfection but no pity. The singularist replies that the God of pluralism may be more human than the deity of singularism. But, for that very reason, says the singularist, the God of pluralism is not truly a God. A God with limited capacities and uncertain purposes can never, insists the singularist, adequately satisfy the aspirations of the religious consciousness of man. Religion has always demanded a philosophy which asserts not merely that the world has in it values, but also that these values will prevail. The theology of pluralism does not allow us this confidence. The truth in this theological debate between the singularists and the pluralists lies, we believe, in a conception which synthesizes both standpoints. Not unity alone, not diversity alone, but, as we shall indicate later, unity with diversity is the most adequate ontological doctrine with respect to the quantitative nature of reality.

The pluralist replies to the singularist's contention that there is a unity between the sciences by protesting that the unity is not so pronounced as the proponent of singularism insists. The sciences would not have developed in the serial order in which they have developed, if they were completely interdependent. That we had physics before chemistry, chemistry before biology, biology before psychology, and psychology before sociology manifestly is indicative of at least some independence among the sciences. The pluralist, furthermore, insists that however satisfying the conception of one science may be from the standpoint of speculation and sentiment, the fact remains that our knowledge of the world has been most pertinent and most useful when the sciences have worked in specialized fields. The physical sciences, with their decided detachment from all other intellectual spheres, are a convincing substantiation of the principle that knowledge counts most when it is most direct and particular in its approach to problems.

The pluralist will not agree with the statement of the singularist that social development suggests a singularistic motive in reality. The development of social units of ever-increasing unity and universality is of no greater importance than the increased emphasis throughout society upon the uniqueness, freedom, and productivity of separate individual selves. The pluralist holds that expansion of the democratic ideal, with its repudiation of absolutism in political theory, is significant of the validity of his position. As in the case of the theological differences between the singularists and the pluralists, the disagreements with respect to social theory are resolved in a synthetic, reconciling doctrine, which combines both singularistic and pluralistic conceptions.

The controversy between singularism and pluralism must ultimately be settled on logical grounds. It is not a matter of deciding which theory we like the better; it is a question of ascertaining which theory is more in keeping with the fundamental nature of things. In short, to settle the problem of singularism and pluralism is to settle the question as to whether, in ultimate reality, relations are internal or external.

II. The Problem of Relations

Our discussion of the problem of singularism and pluralism up to this point has been a comparison of the fruits of the two standpoints. We have been evaluating the doctrines on the basis of their compatibility or incompatibility with theories in science, religion, and government. We are now concerned with an estimation of these two positions from the standpoint of their origins and roots. What is the logical basis for the conflict? What are the presuppositions which underlie both singularism and pluralism? The answer to this question takes us into the consideration of one of the most abstract, but most fundamental problems in the realm of philosophy. It leads us into the study of the two great logical doctrines: the *internality of relations* and the *externality of relations.* The former doctrine is the standpoint of those who espouse singularism; the latter doctrine is the theory of the pluralists.

We shall consider each of these logical doctrines from three points of view: first, their definition; second, their implications for ontology; third, their validity.

A. The Doctrine of Internal Relations

1. Meaning of the notion that relations are internal.— The doctrine of the internality of relations has been shown by Professor E. G. Spaulding to embrace the subsidiary and constituent theory.[1] The first conception involved in the notion of internality is the *modification theory of relations.* This conception means that everything in the world is related to everything else in the world in such a way that all features of reality are affected in some way or other by the relationship. The modification theory affirms that everything in the world is what it is because all other things in the universe are what they are. The second conception involved in the notion of internality is the *underlying reality theory of relations.* This conception asserts that an underlying reality is necessary to sustain the interrelationships between the things of the cosmos. A transcendent reality, or mediator of relations, is necessary to maintain the unity which the modification theory asserts to be manifest in the universe. The cosmic relater has been known by many terms: Matter, Energy, Force, Mind, Spirit, Experience, Personality, and God. Inasmuch as the universe, according to the theory of internality, must be an all-inclusive, harmonious, perfect One, the underlying reality has been generally regarded as Mind, or Spirit, or God, rather than as Matter, or Force, or Energy.

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[1] See ''The New Rationalism,'' Ch. III, Sec. iii. (Henry Holt and Co., 1918.)

The logic supporting the doctrine of internality is the traditional logic, called the *logic of classes,* or *subject-predicate logic.* It is also known as the *logic of inclusion.* Reality is interpreted as being in the form of the logical proposition, S is P. The predicate, P, is considered as being necessarily related to the subject, S. For the logic of classes, the real being, or Absolute, is the all-inclusive class, which embraces all possible predicates, or descriptions of things in the world. The subject, or fundamental reality, is the *substance* in which all particular, finite qualities and relations inhere. Still another name for this logic of inclusion is the *substance-attribute* logic. All finite objects have being only because of their relationship to the all-comprehending reality. The universal alone is considered real. According to this logic, "all varieties of individual expression are thus subordinate to the unity of the whole. All differences amongst various ideas result from and are secondary to the very presence of one universal type of ideal meaning in all the realm of life. All appearance and isolation in finite beings, all fragmentariness of their finitude, these are indeed but aspects of the whole truth. The one is in all, and all are in one."[2] The logic of classes, as this quotation clearly shows, is the preeminent support for singularism.

2. Implications of the notion of internality for ontology.—The internal theory of relations is a doctrine important and precious to idealists. The two chief kinds of idealism, subjective, or Berkeleyan idealism, and objective, or Hegelian idealism, find their substantiation in the conception of internality.

The subjectivist cites the *modification theory of relations,* with its assertion that relations modify things related, in support of his contention that *knowing* makes a difference to objects known. The subjectivist emphasizes the constitutive influence of *knowing.* He stresses the *ego-*

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[2] Josiah Royce, "The World and the Individual," Series I, p. 394. (By permission of The Macmillan Co., publishers.)

centric predicament in which we find ourselves. This predicament, to use the words of E. G. Spaulding, is the situation "that we cannot escape the fact that the known world—the only world we know—is, in every instance, related to some kind of knowing."[3] The predicament refers, says R. B. Perry, to "the impossibility of finding anything that is not known."[4] We cannot conceive of things as being outside of mind, because the moment we commence our conception of them they instantaneously become contents of our mind. The subjectivist believes that this proves that "to be is to be perceived." Mind is so universal that all objects in the world must be modified by its ubiquitous presence. Whether or not the subjectivist's belief in the priority of mind is valid, is a question we shall consider in the next section in our criticism of the idealist's use of the egocentric predicament.

The objective idealist finds justification for his theory in the underlying reality notion in the doctrine of internality. The *Absolute* of objective idealism is the underlying reality which unifies the individual elements of the world into one cosmical being. As F. H. Bradley argues, "in the Absolute no appearance can be lost. Each one contributes and is essential to the unity of the whole. . . . Deprived of any one aspect or element, the Absolute may be called worthless. . . . There is nothing in the Absolute which is barely contingent or merely accessory. Every element, however subordinate, is preserved in the relative whole in which its character is taken up and merged."[5] The criticism of this absolutistic feature of objective idealism follows in the next section.

3. **The validity of the conception of internality.**—We shall consider this topic by examining the legitimacy of the two kinds of idealism discussed above. How satisfactory is the subjectivist's argument from the egocentric

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[3] "The New Rationalism," p. 315.

[4] "Present Philosophical Tendencies," p. 129. (Longmans, Green and Co., 1912.)

[5] "Appearance and Reality" (1902), pp. 456, 457. (By permission of The Macmillan Co., publishers.)

predicament? How defensible is the objective idealist's notion of the Absolute? The criticisms against the two standpoints are largely those presented by the new realists. The basis for the criticisms, as we shall see later, is to be found in the logic of relations, championed by recent realistic thinkers. Let us examine first the criticisms against subjectivism.

The subjectivist has been criticized for treating epistemology as the fundamental science. His insistence that all objects are contents of some mind has led him to assume that no scientific explanation of the world can be valid which does not conform to the principles of reality set forth in epistemology. This tendency to make the theory of knowledge basic is, according to the realist, an evidence that the subjectivist is motivated by romantic and mystical interests. For if things are considered as being constituted by a knowing process, the world is a sphere in which we can feel at home. In treating mind as fundamental, "that very mechanical cosmos which had served to belittle man, is now made to glorify him through being conceived as the fruit of intelligence."[6]

W. T. Marvin, one of the American realists, replies to subjectivism that epistemology is not fundamental.[7] According to Marvin, epistemology is a science in the same way that other disciplines of thought are sciences. It studies knowledge as biology studies life, or physics investigates matter. Epistemology has been regarded as ultimate only because the laws of logic have been considered to be laws of thought, or mind. But the laws of logic are just as objective, answers Marvin, as the laws of heat or light. The epistemologist must assume the possibility of knowledge to justify his theories just as other scientists must assume the possibility of knowledge before entering into their investigations. Epistemology must arrive at conclusions in the same empirical and inductive ways necessary in other scientific fields. It is not unique, but suffers the limitations and benefits by the advantages incident to the attainment of perceived truth in any domain of knowledge.

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[6] Perry, "Present Philosophical Tendencies," p. 119.

[7] See "The New Realism," pp. 45 ff. (The Macmillan Co., 1912.)

The subjectivist, say his critics, has defended the priority of consciousness because he has not analyzed experience into its components. He has given to knowledge a *pseudo-simplicity,* to use a term of R. B. Perry. But experience is not a mental *simple;* it is a subjective-objective *complex.* G. E. Moore, an English philosopher, in a celebrated essay, "The Refutation of Idealism,"[8] was the first of the recent realists to show that consciousness may be divided into an objective, or *content* element, and a subjective, or *awareness* element. The subjective idealist, according to Moore, believes that *esse* is *percipi* because he does not recognize that *esse* is different from *percipi.* Perception is just the process of becoming aware of entities outside of consciousness. When we have a sensation of *blue,* of course we have in consciousness an awareness of blue, but this does not prove at all that the *blue* does not exist external to and apart from consciousness. Other realistic writers who, like Moore, have insisted that experience has objective features, independent of its subjective aspect, are R. B. Perry, E. G. Spaulding, E. B. Holt, W. P. Montague, S. Alexander, Bertrand Russell, John Laird, T. P. Nunn, and A. N. Whitehead.

The reply of the subjectivist to his critics among the realists is not so much a refutation as it is a complaint that the motive of subjectivism is misunderstood. The subjectivist answers that even Berkeley did not deny that there were both objective and subjective elements in experience. The subjectivist is ready to admit that there may be existents independent of our experience, but, even if their external presence could be demonstrated (which possibility to the subjectivist is very remote), what good are entities outside of our consciousness? The realist's doctrine of external relations and his doctrine of analysis may substantiate the theory that all objects are not in mind, but the subjectivist will wonder much concerning the meaning and value of things which have being beyond the experiences of man. We are greatly indebted to realism to-day for saving for us the independence and objectivity of physical existents, but we must also remember, with the subjective idealists, that the material data become features of worth and beauty only when they become the contents of appreciative minds. In the experience of persons the abstract and partial accounts of subjectivism and realism find reconciliation and synthesis.

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[8] *Mind,* N. S., Vol. XII, pp. 433 ff.

The realist opposes objective idealism on similar grounds to those used in criticizing subjectivism. Both idealisms, he believes, betray a mystical romanticism which a thoroughgoing scientific analysis would soon dispel. To the realistic thinker, the objective idealist's interest in the Absolute is significant of a manifest religious and esthetic concern. That the Absolute of idealism has so often been identified with the God of theology is testimony to this fact. Absolutism, in defining the world as one, eternal, perfect, and rational is using the language of mysticism, not the terminology which attempts to see reality as it actually is. To the realist, the unity which the absolutists find in the world is not the result of an inductive search, but the consequence of an arbitrary interpretation of the cosmos in terms of a postulated logical and ethical ideal. The pragmatists—William James especially—join the realists in condemning absolutism for considering the world in the light of faith, rather than in the light of fact.

The objective idealist replies that the realists and the pragmatists, in paying attention to the finite changing particulars, have lost sight of the fundamental universals, which are just as truly present in reality as any separate, transient items of experience. The objective idealist will insist that he has not developed a philosophy which is remote from the actual experiences of human life or which fails to recognize the great movements in the evolutionary process. He will admit, however, that he has been more concerned to interpret reality in terms of the great social, religious, political, and cultural forces, rather than in terms of the less inclusive categories of physics or biology. His discovery of order in the cosmos, the absolutist will declare, is due to the fact that he has attended to the great activities in which unity and permanence are manifest, whereas the realists and pragmatists have been interested in affairs in which plurality and change are most obvious. We shall notice below that realistic thinkers, in so far as they base their conceptions on mathematics, keep in their doctrines the idea of plurality, but emphasize, with the absolutist, the notion of eternality.

Most of the recent criticisms of objective idealism have been motivated by the belief that the objective idealist espouses a cosmos in which the individual entity loses its independent being and becomes merely a fragment of the cosmic whole. The objective idealist, however, does not deny the existence of separate, finite beings. But, as the subjectivist asserts that particulars must be known to be valuable, the absolutist declares that they must be members of an organic system to have worth. The absolutist does not argue for singularism to deny the discrete existence of parts in the world; he does argue for singularism, however, in order to present a doctrine which will demonstrate that parts have value. A thing by itself may have being; it certainly could have no worth or meaning which would be significant. The absolutist is, therefore, more concerned with fair treatment for the particular entity than is, perhaps, the pluralistic philosopher. The reconciliation between the two standpoints comes when we realize that realistic pluralism will substantiate the independent existence of finite, separate individuals in the world, while idealism justifies, by its depiction of the interrelations between the individuals, the theory that they are items of importance and worth.

Let us now pass to a consideration of the logic which the realist uses to support his pluralistic doctrines.

B. The Doctrine of External Relations

1. Meaning of the notion that relations are external.—The exponent of the external theory of relations rejects both notions of singularistic logic, namely, the modification theory of relations and the underlying-reality theory of relations. The external theory does not hold that everything in the world makes a difference to everything else, and it rejects the idea that things in relation must be held together by a mediating entity. For the singularists' formula *S in P,* the pluralistic thinker would substitute *S and P.* As R. B. Perry puts it, "the world is a mixture of oneness and manyness, of relevance and irrelevance, of disjunction and conjunction, of essence and accident. . . . It has unity, but also variety; it is orderly, but only in a measure; it is good, but also in parts bad and indifferent. For better or for worse, it is just this homely, familiar old world, with some rhyme and reason in it, but with much that is arbitrary and inconsequential."[9]

The new realist substitutes for the logic of classes the *logic of relations.* He does not deny that the traditional logic of inclusion is applicable in certain situations. He insists, however, that the relation of inclusion is but one of many relations which may occur between things in the world. The doctrine of the realist, called *logical atomism* or *absolute pluralism* by Bertrand Russell, asserts that relations are not grounded in the nature of their terms. Relations are independent of their terms, or objects which they relate. Objects may pass in and out of the relationships without being modified in any way. When the scientist analyzes a situation, he notices that the relations between phenomena are just as important as the phenomena themselves. In fact, science is to-day more interested in the relations than in the entities related. William James, a pragmatist whose ontology, like that of realism, asserts the external relationship between attributes, things and relations, expresses this pluralistic doctrine as follows: "Prepositions, copulas, and conjunctions, 'is,' 'isn't,' 'then,' 'before,' 'in,' 'on,' 'beside,' 'between,' 'next,' 'like,' 'unlike,' 'as,' 'but,' flower out of the stream of pure experience, the stream of concretes or the sensational stream as naturally as nouns and adjectives do, and they melt into it again as fluidly when we apply them to a new portion of the stream."[10] The new realist justifies his doctrine of externality by pointing to the proficiency of scientific analysis. To refute the speculative unities of idealism one need only refer to the empirical simplicities of science. "A neo-realist recognizes no ultimate immediacies nor indefinable entities except the simples in which analysis terminates. . . . Such a course of procedure is fatal, not only to a mystical universalism in which the totality of things is resolved into a moment of ecstasy, but also to those more limited mysticisms in which complexes are regarded, despite the obvious manifoldness of their characters, as nevertheless fused and articulate."[11] The aim of analysis is to reach the purely logical level, to arrive at the fundamental being in which particles *merely are.* The ultimates of analysis have no quality but *pure being.* Such analysis cannot, of course, in every case be actually carried out. But where situations cannot be divided materially into their ultimate components, an analysis, which E. G. Spaulding calls *analysis in situ,* may occur. This kind of analysis is a conceptual separation of a thing into its parts without experimentally rending the object asunder. The rigorous analytical procedure, whether actual or conceptual, when completely executed, leads to the basic realm of reality. What, to the realistic thinker, this fundamental being is, is our next question for consideration.

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[9] "Present Philosophical Tendencies," pp. 245, 246. (Longmans, Green and Co.)

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[10] "A Pluralistic Universe," p. 349. (Longmans, Green and Co., 1909.)

[11] Marvin, "The New Realism," pp. 32, 33. (By permission of The Macmillan Co., publishers.)

2. The implications of the notion of externality for ontology.—The pluralistic, analytical procedure is, of course, destructive of the idealist's contention that the ultimate reality is mind. It is also opposed to the materialist's belief that fundamental being is physical substance or motion. But what kind of ultimate stuff does it substitute for mind and matter?

The ultimate world, for realism, is a sphere of neutral entities, neutral in the sense that they are qualityless simples. The basic reality of realism is a world of mere *is-ness,* the only kind of world beyond which analysis cannot go. The science which describes this basic level is logic. The logic, which considers realistic ontology, however, is not the concrete logic of Hegel, which discusses the complexities and richnesses of reality. Nor is it the technological logic which treats of the conditions and principles of correct thinking. Realistic logic is *symbolic logic,* a logic which deals with the abstract relations which obtain in the field of mathematics.

S. Alexander's conception of space-time is an outstanding ontology which espouses the realistic idea of a qualityless basic level. To Alexander, nothing is simpler than space-time. There are no terms so lacking in connotation that they could be useful in defining it. Space-time, possessing only motion, is prior to all existent objects. But out of space-time, as we have observed in our consideration of emergent evolution, the various levels of ''qualitied'' being are derived.

E. G. Spaulding regards the ultimate realm of analysis as a realm of subsistents, a realm which includes entities without spatial or temporal location. Physical things are in space and time; mental existents are in time, but not in space. Subsistents are outside of space and time.[12] In this subsistential realm Spaulding includes such entities as perpetual motion, hypothetical substances like phlogiston, ghosts, future events, past happenings, particular objects, universal objects, motion, rest, space, and time. This realm for Spaulding is not, however, the realm in terms of which reality is to be interpreted. For Spaulding, the universe is an aggregate of existents, physical and mental, and subsistents. Like Alexander, Spaulding thinks of reality as being a development from simpler to more complex types of being.

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[12] See ''The New Rationalism,'' Ch. XLIV.

A third realistic philosopher who treats analysis as revealing a simple, basic realm is E. B. Holt. For Holt, the ultimates of reality are logical propositions. The world is an evolutionary system in which there is progress from the entities of logic, mathematics, and algebra to the data of esthetics, ethics, and theology.[13] What criticism should be made of theories like these of Alexander, Spaulding, and Holt, which find the prior elements of reality in simple, qualityless being?

3. **The validity of the notion of externality.**—That the real test of the legitimacy of pluralism rests on the validity of analysis is substantiated by the notions of symbolic logic. There are certain conceptions in symbolic logic which, to the realistic pluralist, demonstrate the truth that relations are external. The arguments which the realist cites as in his favor are the argument of simple terms, the argument from asymmetrical relations, the argument from the notion of the infinite, and the argument from the idea of the continuum. To the realist, these arguments are convincing mathematical demonstrations that the position of pluralism is more tenable than that of singularism. We cannot enter into an examination of these arguments here. Their explanation would lead us into discussions much too intricate and difficult for an introductory work in philosophy.[14] After all, the case may be that the pluralist's case

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[13] See "The Concept of Consciousness," Ch. VIII. (The Macmillan Co., 1914.)

[14] For a brief examination of the mathematical basis of pluralism, see D. L. Evans, "New Realism and Old Reality," Ch. III. (Princeton University Press, 1928.)

may be supported in the abstract conceptions of mathematics without being substantiated in the complex and concrete affairs of physical and psychological activity. So, if we cannot criticize the mathematical arguments presented in support of pluralism, we may give certain common-sense objections to a doctrine which would find the explanation of reality in terms of pure, qualityless being.

We wonder at once how these logical ultimates can account for the world of quality which we observe in our ordinary experiences. The realistic pluralists are in a dilemma. If ultimate reality is simple being, then emergence is miraculous. If ultimate being is not completely simple, but contains potentialities of motion and growth, then realism is not vindicated as the doctrine to champion analysis.

Again, the pluralistic thinker, with his zeal to arrive at mathematical ultimates, is motivated by sentiment no less than the idealist. As Helen Huss Parkhurst asserts, "the notion of a universe of closed, self-contained, autonomous entities, impervious to change and destruction, such as the realist provides for himself, is one of the emotionally most comforting notions that is producible by metaphysics."[15] There is in this type of emotional response, however, a spirit of resignation and passive contemplation. The truly spiritual souls have not been those who have escaped from actualities into a remote and abstract realm of perfect mathematical relations, but those who, in sympathy and participation, have loved and served the world of fact about them.

Let us now pass from our discussion of the logical backgrounds of singularism and pluralism to an examination of a cultural epoch in which the two standpoints were strikingly manifest.

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[15] "Recent Logical Realism," p. 42. (Bryn Mawr, 1917.)

III. The Medieval Debate between the Realists and the Nominalists

Historically the problem of singularism and pluralism was most distinctly expressed in the debate between medieval *realism* and *nominalism.* Among the realists were Scotus Erigena (810–880), and Anselm (1033–1109). Among the nominalists were Duns Scotus (1265–1308) and William of Occam (1280–1349). In medieval philosophy reconciliation between the two rival systems was found in a theory which is called *conceptualism,* having as its chief exponents Abelard (1079–1142), and St. Thomas Aquinas (1224–1274).

A. Meaning of the Terms

1. **Realism.**—This theory takes the standpoint that universals are real, that they are ontological entities having a being apart from any human knower. Nominalism asserts that universals exist only as forms of thought in knowing minds. The conceptualist asserts that universals may exist both in ontological and epistemological being. What then are the universals concerning which there are these different opinions?

Universals are in psychological terminology what are usually known as general ideas. *Red* is a particular idea, as in "red apple." *Redness* is the general idea, or conceptual color. Truth, goodness, beauty are universals. They cannot be perceived; they can only be apprehended by reflective thought, and in reflective thought only after much analysis, comparison, and generalization. We can read true propositions; we can hear good voices; we can smell beautiful flowers; but we can neither see, hear, nor smell truth, goodness, or beauty. Personality, law, democracy, deity—these are all universals.

The medieval realist held universals are before things: *universale ante rem.* The realist thinks of particular objects as being the embodiment of the primordial principle. For the realist particulars are real only to the degree that they manifest the meaning of the producing and sustaining universals. Some medieval realists went to the extreme of denying that individual beings have any existence whatsoever. The mystics and the pantheists, who were present but always repudiated in the medieval community, took this radical stand on realism.

The logic of medieval realism supports singularism in its assertion that the general is more real than the particular. *Man* is more real than *a man; house* is more real than *a house; government* is more real than *a government.* On the basis of this position the medieval churchman argued for the supremacy of the church over the individual. The church is a universal which is independent, for its being, upon the existence of individual members. On the ground of realism, the medievalist believed that, since universal man is sinful, all individual men are sinners. Salvation could only be possible if a perfect universal man could participate in individual men, so as to endow them with his goodness. Christ, for the church, is the universal good, which brings redemption through participation in particular selves.

The medieval realists, however, did not carry singularism to its extreme form. They were singularistic in asserting that the universal is more real than the particular. But they did not fuse universals into one all-inclusive universal, as did Spinoza and Hegel. As we suggested above, medieval realism was neither mystical nor pantheistic in a radically singularistic sense. Universals, for medieval realism, are separate and many. They are organized, however, into a hierarchy and system. Like Plato, the medieval realist viewed God, not as an all-comprehending universal, but as the highest universal, which organizes and sustains, but does not negate the subsidiary universals.

2. **Nominalism.**—This view asserts that universals are after things: *universale post rem.* In other words, the

nominalist believes that the real things are the data of sense perception, and the physical events which go on with or without our awareness of them. Universals, to the nominalist, are not intrinsic and independent entities. The world before man, to the nominalist, was neither good nor bad, true nor false, beautiful nor ugly. These attributes are man-made, the products of human intelligence. Universals are psychological tools for purposes of social communication and environmental control. We have already met the point of view in our examinations of positivism and pragmatism.

The nominalist denies any validity to the notion of the divine right of kings or popes. Neither the state nor the church is a field for the indwelling of eternal organizing and supporting laws. The church and the state are social instruments developed, through stages of social evolution, to aid man in adjusting himself most proficiently and most pleasantly to the difficulties and demands of his physical and social environment. Needless to say the medieval nominalist was a pluralist, emphasizing always the worth of the part and the independent existence of the finite.

The pluralist, as well as the nominalist, recognizes universals. The pluralist, no less than the nominalist, regards general ideas as more significant than sense perception. The pluralist, however, locates these important intellectual entities in man's mind. General ideas, principles, and laws, for the nominalist, are epistemological, not ontological. Universals, according to nominalism, are the same as the *forms* in the scientific philosophy of Francis Bacon (1561–1626). For Bacon, nothing exists in nature with the exception of physical bodies, the causes of interrelationships of which are known to us as forms. The scientific forms, or laws, are ascertained by inductive methods of knowledge, and are not to be confused with eternal "forms," which Bacon, no less than Plato, acknowledged to be discernible by metaphysical insight. The nominalist does not regard universals as superhuman objects to contemplate, but rather as the discoveries of human intellect which disclose the regularities of man's experiences. The religion which nominalism naturally tends to approve is not the supernaturalism of realism, but a humanism in which the aim of religious endeavor is to better the psychological and social situations of human life.

3. **Conceptualism.**—This theory holds that the universals have both ontological and epistemological status. This standpoint is also known as *moderate realism*. It is the realism of Aristotle as distinguished from the extreme realism of Plato. Conceptualism asserts that universals may be present in things as the organizing principle of objects outside of the realm of the knowing mind. Conceptualism also affirms, however, that the presence of universals in the extramental world does not preclude their occurrence as ideas in the sphere of mind. There is a question in this reconciling position as to whether we know general ideas, which are copies of the ontological universals, or whether we in knowledge actually get in contact with the ontological universals themselves. A person who holds that we know universals, but that universals, as known, are where they are, even when not known, is an epistemological monist. One who holds that the known universals are images of the external non-mental universals is an epistemological dualist. Generally the conceptualists have been epistemological dualists. The medieval conceptualists were dualists in epistemology.

4. **New realism.**—This theory is like medieval realism in asserting the objectivity and extramental character of universals. In fact, the new realists of to-day are sometimes called revivers of Platonism, because they believe, as did Plato and the radical medieval realists, in the ontological status of universals. The new realists, however, are more pluralistic than the Platonic realists. They believe that universals are real in the sense that they have independent being, but they do not believe that they are real in the sense that they give existence and meaning to the

world of particulars. Particulars, to the new realist, are also real and possessed of independent being. For the new realist, relations between things and ideas are, as we have learned, external. The new realist is an epistemological monist in his theory concerning the bearing of knowledge upon universals which are known.

B. Concluding Comments concerning the Controversy between the Realists and the Nominalists

The realists and the nominalists are both right in what they affirm, but both are wrong in what they deny. Each point of view is partial and betrays the fallacy which R. B. Perry calls the *fallacy of exclusive particularity*—each doctrine suffers from representing only one point of view, to the neglect of other standpoints equally legitimate. The pluralist and the nominalist view the world in the light of sense perception, and perception is notoriously a method of knowledge which discriminates and delineates features of the real in segregation from their context.

The nominalist has also been prone to stress the conative feature of experience, and will, in man, has always been acknowledged as making for individualism and egoism rather than for harmony and altruism. The realist, on the other hand, has been wont to emphasize too much the place of reason in our knowledge of the real. In his enjoyment and ecstasy over the oneness of a rational solution of our problems, he has too often forgotten the conflicts and ambiguities present at the beginning of his task. He has also given the volitional element in experience too small a place. Consequently he has not had full appreciation of the forces of consciousness which make for competition and rivalry in the social group.

The controversy between the nominalists and the realists logically is a conflict between the internal and the external theories of relations. Psychologically and epistemologically, the debate is a strife between the empiricists and the voluntarists against the rationalists and the intellectualists. The solution of the conflict, like the solution of the strife between materialism and idealism, is found in the theory which recognizes the actuality of change, diversity, and materiality, but which treats these conditions as being organized, unified, and spiritualized in the vital wholes called *persons*. Nominalism, empiricism, realism, rationalism, and other doctrines have arisen largely because we have interpreted reality in terms of partial experiences of the total self or in terms of selves which, in temperamental constitutions, are not complete personalities. When we interpret the cosmos in terms of the full and orderly experiences of abundant selfhood, then we shall have a philosophy in which the various *isms* will find themselves unified into a truly comprehensive doctrine.

To examine this concept of personality, so fraught with significance for an ultimate world view, is the task to which we now direct our attention.

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PART FOUR

THE PRINCIPLES OF AXIOLOGY AND THE PROBLEMS OF PERSONALITY

CHAPTER XV

THE PSYCHOLOGICAL NATURE OF SELFHOOD

THE PRESENT part of our introduction to philosophy deals with questions in the field of values. Cosmology ushered us into a consideration of reality; epistemology introduced us to the meaning of knowledge; now axiology is to give us some ideas concerning the nature of value.

I. The Significance of the Problems of Selfhood

Before interpreting values we shall find it necessary to examine the problems of selfhood.

A. THE PERSONAL STATUS OF VALUES

It is the thesis of the authors of this work that no value is possible in a world void of personality. That there should be persons, human, or divine, or both, is a prerequisite for the presence of values in reality. A value which is not worth while to some conscious and appreciative self is, we believe, a value in name only. Our standpoint is essentially that of J. A. Leighton, who not only regards personality as the source and center of values, but considers values, in turn, as the instruments for the realization of richer selfhood. "If we recognize," writes Dr. Leighton, "that the willing service of certain values, such as justice, love, truth, and beauty, are the conditions through which our spiritual and personal lives are fulfilled, this recognition implies that such values inhere in the constitution of ultimate reality and this implies that reality, at its highest and most permanent level, is spiritual and personal.''[1] We believe that T. H. Green affirms the truth when he states that ''our ultimate standard of worth is an ideal of *personal* worth. All other values are relative to values for, of, or in a person.''[2]

We would go still further than an affirmation that values must find their status in a personal situation. We would also declare that personality itself is, to an extent at least, a value. Neither divine nor human selfhood can be fully explained in the terms of empirical science. A complete interpretation of the self will involve the conclusions of speculative insight. The self is factual to a degree, of course, but it also possesses ideal features which can only be recognized in such introspective states as aspiration, faith, and sympathy. Sentiment must supplement science in a thoroughgoing interpretation of selfhood. As W. M. Urban asserts: ''Whatever may be said as to the ultimate metaphysical reality of the self, it is not, strictly speaking, an object of immediate experience, not an object of perception, nor, on the side of feeling, of simple appreciation, but is rather a construct of higher order built upon immediate perceptions and appreciations. . . . It is, first of all, a worth construction, and only secondarily an object of knowledge.''[3] In the sentiments involved in the relations of parenthood, friendship, or romantic love, the most significant features of personality are often revealed.

The legitimacy of the contention that the self is, in part, a value, and the validity of the conception that values imply the existence of persons will be more manifest as our discussion of personality and value proceeds. Our immediate concern, however, is with the self apart from its axiological implications. What is the self, so important to the destiny of values?

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[1] ''Man and the Cosmos,'' p. 408. (D. Appleton and Co., 1922.)

[2] ''Prolegomena to Ethics,'' Sec. 184. (Oxford University Press.)

[3] ''Valuation, Its Nature and Laws'' (1909), pp. 262, 263. (By permission of The Macmillan Co., publishers.)

B. The Body-Mind Problem in the Doctrine of Selfhood

To thoroughly understand personality is to appreciate the ethical nature of selfhood and to know the conditions prerequisite to the attainment of the ethical status. To be a person means to be a moral individual. To be a moral individual is to organize, through reflective activity, one's instincts, emotions, habits, thoughts, and sentiments in a way to promote the harmonious richness of one's own experience and the organic well-being of the community at large. A complete explanation of selfhood would involve a treatment of the psychological development of the individual from a mere biological animal to a rational, self-conscious, self-determining being. It would also necessitate a study of the social forces which have functioned to change man from an egoistic savage, obeying the group from fear, to an altruistic citizen, serving the group from loyalty.

To enter fully into a treatment of the rationalizing and socializing forces which have brought about the moralization of man would, however, carry us far afield from the philosophical implications of selfhood. A discussion of the stages in the development of personality, either from a social or from an individual standpoint, would be a scientific survey, appropriate in sociology, anthropology, or social psychology, but hardly profitable for philosophical purposes. We have tried, however, not to neglect the fact that the self is an entity which grows in and because of its relationships with environmental factors. In previous chapters we have sought to indicate the main stages in the psychological and sociological development of man from the level of primitive thought to the level of reflective understanding. In the following chapter we shall attempt to show the relation of the self to its physical, biological, and societal contexts.

Our immediate purpose, however, is not to regard the human person as the final stage in the evolutionary process, or as a resultant of various stimulating conditions. The problem of the present chapter is to examine the selfhood of an individual who has attained to the level of social responsibility and intellectual achievement. To put the matter another way, we are now concerned to study man as the source and center of judgment. Judgment we have already defined as the process in which the qualities and meanings of the outside world find expression in the consciousness of a self. We are interested in personality as the situation in which the interactions between knower and known, subjective and objective, consciousness and environment, are unified into a living whole. In other words, our purpose to investigate the interrelationships between the physical and the psychical features which find their unity in individuality is nothing more than the aim to discuss the famous *body-mind problem* of philosophy. For, when all is said and done, the solution which a philosopher proffers for this celebrated enigma will tell us quite fully what he believes a person fundamentally to be.

We shall discuss the body-mind problem by investigating the mind element of the issue. We do this not only because a complete examination of mind must take us into a consideration of body as well, but because *we believe that mind, in whatever way defined, is generally recognized as more significant than matter, however this latter term may be defined.* The physical features of man's nature are found in objects without number. The biological phases of his being are present in millions of living organisms. But the intellectual character of selfhood, at least in its higher expressions, is found in men and God alone. In examining mind we are investigating the center in which and by which man becomes aware of the activities outside of his own being and of the activities on the inside of his own nature. Mind we further regard as the center of experience in which and by which man effects devices for the enjoyment, organization, and control of the activities of which he becomes aware. If one asks what awareness is, we must acknowledge that we have a very inadequate answer to his query. To be aware of something is to perform an exercise so immediate and so obvious that any terms by which we might define awareness would be more vague than the word *awareness* itself. To speak of awareness as *consciousness* may furnish us with a more familiar term, but it hardly provides us with one more definite in meaning. When we refer to mind as the seat of awareness, or consciousness, we mean that it is the locus of knowledge. *Knowledge we take to be the reproduction in the inside experiences of a private self of the affairs which occur in the outside sphere of public observation.*

Our definition of mind as the locus of knowledge, or, to put it another way, as the center of judgment, *does not necessarily imply that mind is mental.* Mind has usually been described in psychical terms, but, as we notice later, it may also be described as a physical existent. Our notion of mind may be supplemented with another view of mind, in the sense of intelligence. Mind is sometimes used not merely as a reflection in internal experience of outside situations, but also as an instrument by which we manipulate both the internal experiences and the external factors to realize ends set up by our creative intelligence. Furthermore, our idea of mind is compatible with the doctrine which identifies mind and soul. If one wishes to explain the activities of the entity which we call mind by the postulation of another mind, immortal and transcendent, we readily acquiesce. Our only request would be that the postulation of a mind which acts as the organizer, sustainer, and conserver of our inner experiences, should be recognized as the postulation of an *ego,* or *soul,* rather than as the postulation of *mind.* Mind has still another meaning which we do not develop in the present connection. *Mind is often used as synonymous with the culture of a people or race.* We speak of the Greek mind, or the American mind, or the mind of the Orient. Finally, we would give warning that *our view of mind is not to be confused with the notion of mind as the cosmical principle of rationality in the world.* We do not now mean by mind any Universal Spirit, Reason, or Absolute. For our present purpose, therefore, we are interested in mind as an individual separate seat of knowledge. The next chapter will discuss such questions as the proficiency, freedom, immortality, and universality of the self.

What is this mind, which we have defined as the source of an individual's experience? Is it psychical? Is it physical? If psychical and physical, how are the two elements connected? To such questions as these we now must give attention.

Mind may be studied from two points of view. We may consider mind in the light of the different psychological methods. What feature of mind is disclosed as essential in each of the various perspectives in psychology? Or we may treat the problem of mind by presenting the various solutions to the problem of the relation of the physical and psychical features of human selfhood. What is the relation of the internal, mental states to the external, physiological processes in man's nature? The first concern is that of scientific psychology; the second problem is that of speculative psychology. Let us notice the main issues in each consideration.

II. Various Views of the Meaning of Mind

There are three main interpretations of mind, based upon the three chief methods of psychological investigation. The first method of psychology emphasizes mind as a datum of introspection. The second method stresses mind as the object of external observation. The third method views mind as an entity disclosed both by introspection and by observation. We shall consider notions of mind reached by employing each of these methods. And may it be remembered that we are not thinking of mind in any abstract sense, but as the essential feature of a self. The following examinations of mind are truly examinations of selfhood.

A. Mind according to Introspection

The introspective method in psychology refers to the investigation by an individual of his own private, inner experiences. He may report to others the findings of his researches into his own subjective states, but he alone can enter into the internal precincts of his own mind. We cannot introspect the minds of others; nor can they enter into the privacy and uniqueness of our own consciousness. Postponing until the end of the present section a criticism of introspection as a psychological method, let us study the notions of mind it supports.

Throughout this chapter our psychological classifications will reveal the use of three principles. Whether introspective or observational methods, or both, be used, mind can be investigated from the standpoint of its content; from the standpoint of its activity; and from the standpoint of its activity and content. For instance, if *perception* is the phase of mind being studied, three meanings of perception are possible: (1) Perception as the perceiv*ed*. In this case we emphasize in perception the object or content of perception. (2) Perception as perceiv*ing*. In this case we pay main attention to the activity in the consciousness of the perceiver. We consider the knower's activity, rather than the known content. (3) Perception as percept*ion*. In this case, perception is a combination of content and activity, of the *-ed* and the *-ing* features of experience. As we shall see, each of the three psychological methods may regard mind from each of these three perspectives. A survey of mind from the standpoint of psychological methods brings to us, therefore, nine outstanding conceptions.

Three psychologies develop the introspective notions of mind: *faculty psychology; structural psychology;* and *phenomenological psychology.* Each one of these psychologies deals with a different phase of experience. Faculty psychology deals with the experience from the standpoint of its activities. Introspection, as far as faculty psychology is concerned, pertains primarily to the dynamic ''doing'' feature of experience. Structural psychology represents introspection concerning the contents of experience. The structural psychologist doesn't look within to find out what mind is doing, so much as he introspects to find out what mind contains or holds. The phenomenologist has a method of internal inspection which discloses mind both as activity and as content. Kant and Christian Wolff may be taken as outstanding proponents of faculty psychology; E. B. Titchener, of structural psychology; and Edmund Husserl, of phenomenology.

1. **Faculty psychology.**—This view represents in the field of psychology the notion of the university implied in the medieval educational system. In the schools of the Middle Ages the teaching faculties were entirely disparate: the faculty of medicine was separate from that of theology, the faculty of biology was separate from that of law. So too, for the faculty psychologist, the various activities of mind are discrete, mutually exclusive forces. The soul, will, feeling, intellect, conscience, instinct—all are separate centers of motivating influence. We have to-day faculty psychology continuing in the notion of some people that the soul is a separate individual entity, dwelling in the body of man and directive of his mental life, but somehow or other free, independent, and possessed of the power of continuance when the present life is over. According to this theory, the soul has activity, is a force, but it has no content substance. It is pure spirit. Faculty psychology, according to the recent scientific psychologist, manifests the fallacy of *hypostatization*—that is, it makes concrete and real an abstraction; or, to put it another way, it gives an adjective the status of a noun. The word comes from

the Greek word ὑπόστασις, which means *substance.* We are thinking, feeling, willing individuals, as the faculty psychologist declares; but thinking, willing, and feeling are descriptive and inseparable phases of our one inclusive experience. To separate thinking, willing, and feeling from the complete mental life and to say that we have separate activities like thought, will, and emotion is to hypostatize; it is to exalt attributes of experience above experience, of which the attributes are but subsidiary phases.

2. **Structural psychology.**—As the faculty psychologist is wont to emphasize the activities of mind above the contents of mind, contrariwise, the *structural psychologist* is prone to extol content above activity. The structural psychologist, like the faculty psychologist, is influenced by scholastic thought. Both think of mind as being constituted by separate entities. The constituents for structural psychology, however, are less dynamic and mobile than those of faculty psychology. For the structural psychologist, experience is the sum total of the discrete ideas, feelings, memories, and perceptions which we have. This notion that mind is an aggregate of many parts, a sort of mosaic, gives to the point of view its title *associationism.* Also, since according to the structuralist the higher mental processes are complexes of the simplest types of experience—namely, sensations—the position is sometimes called *analytical psychology,* or *sensationalism.* The structural psychologist is just as false in his division of complex mental states into sensations as the faculty psychologist is false in separating the great organic impetus of mental life into smaller particular forces. Both points of view are legitimate as ways of looking at experience. Their analyses are good for theoretical purposes—that is, for purposes of understanding experience—but we need to recognize that the mind is a continuity, a unity, a stream. Any doctrine which violates this solidarity is artificial. Faculty psychology and structural psychology have not profited through the emphasis upon interdependence and organic

reciprocity presented in recent theories of evolution.

3. **Phenomenological psychology.**—The third point of view, which uses introspection primarily, is that of *phenomenology.* The phenomenologist is faithful to activity in thought in that he believes that introspection reveals the act of being conscious as well as the object in consciousness. Every cognitive process, for the phenomenologist, implies an attitude on the part of the ego which is just as significant as the content of experience to which the attitude is directed. The phenomenologist is true to the content side of experience in that he really regards the content as the main feature of conscious life. What is behind the contents or data of our experience is not disclosed in introspection. The ''immanent inspection'' process of the phenomenologist discloses no transcendent or metaphysical entities, psychological or physical. What we have in consciousness are data of pure consciousness. Introspection puts us right in touch with this world. The self as a subject of this pure consciousness and our physical nature as the object of this pure consciousness are never intuited; they are what the introspected experiences intend or mean. The conscious experience, therefore, is not only a content of our knowledge, it is also an activity, a pointer, a meaner of something beyond experience. In the phenomenological notion of introspection, activity and content are thus both seen to be recognized, and phenomenology may, therefore, be regarded as, in a sense, the synthesis of faculty and structural psychology.

4. **Criticism of introspection.**—What shall we say of introspection as a psychological method? In the first place, it must be said in its favor that it is the only method by which we can be sure that we are actually inside experience. We can study men's language reactions, their gestures, the secretions of their glands, their pulse rate, their breathing, and so on, and feel that we know what is going on in their minds, but this conviction is based solely on an inference. We only know that a man who pulls his hair

and grits his teeth is angry because when we carry out these performances, we ourselves experience the emotion of anger. The behaviorist says that thinking is largely a subvocal reaction of the larynx, but he would never have located thought in the voice box, had he not through introspection been aware, during thought, of internal kinesthetic sensations caused by the movements of the laryngeal muscles.

Introspection is valuable also in observing responses which to an outsider never appear to have any physiological expression. The behaviorist can tell whether we are in a contemplative mood or in a state of tension but unless we tell him through a word or action the object of our contemplative interest, he can never tell by outward observation whether we are enjoying a memory image of the "Madonna of the Grand Duke" or of Gründenwald as seen from the Jungfrau. Many of our thought processes appear to have no concomitant biological reactions. The behaviorist will reply to this contention, that the physiological behaviors are there, but we have not the instruments for their observation or measurement. He will assert that, with the improvements in experimental apparatus in psychology, the day will come when even the most internal and hidden and slight movements of the organism will be as plain as are now the beatings of the heart. To this hope of the behaviorist the introspectionist will present his doubts, and will insist that, at any rate, until this day arrives, introspection cannot be abandoned.

The introspectionist recognizes difficulties, of course; he recognizes that in introspecting mental processes one does modify their character by the very process of introspection. When one begins to examine internally his own rage he soon finds his anger which he is so interested in investigating to be disappearing. The introspectionist also acknowledges the fact that it is logically impossible for us by internal inspection to catch hold of the ego or subject of our experience. We cannot catch it, because it is the catcher. It is impossible, at least in finite minds, for the subject and object of knowledge to be identical in one moment of experience. The introspectionist will reply to these criticisms that they are just as relevant to outward observation. Even in external observation, the personal factors, as the attitudes and prejudices of the knower, determine, to a greater or less degree, the success of our knowledge process. Then again the introspectionist is ready to admit that reporters who are questioned in the same way and from whom similar answers are expected, give contradictory replies. The introspectionist knows full well also that a man's introspections in the very same problem will be conflicting. To the introspectionist, however, these are remedial difficulties and not inherent defects of the introspective method. Introspective observers may be trained just as observers are trained in physical sciences. The mental conditions are more complex and elusive, to be sure, but it is often possible to secure a statistical average among various introspective reports, which will possess the validity characteristic of experimental findings in the realm of experimental science. The introspectionist, again, is ready to confess that his method is not capable of being applied to animals, imbeciles, and young children. He will insist, however, that, for an understanding of the normal adult, the behavioristic examinations of animals and deficient humans are also of doubtful significance. The intelligent adult has cultural experiences impossible of inference from the calculations made, in observational psychology, of the reactions of animals or of inferior men.

B. Mind according to External Observation

We are now ready to study the psychological theories of mind of those who emphasize external observation as the method of study. It needs to be recognized at once that from this point of view the word *mind* is a misnomer. To the external observationist, there is no such thing as mind as a unique substance. Mind is not an entity different from physiological activities. The term *mind,* to the exponent of external observation, if he uses the term at all, is a name employed to indicate observable physical phenomena which are open to outward inspection. Mind as an internal substance or event, known only in private, individual experience, is completely repudiated by the followers of the objective method of psychological investigation.

There are *three points of view* in the psychology which exalts external observation. One regards mind as the object to which we react. Experience from this point of view is identical with the *content* of knowledge. A second standpoint pays most attention to mind as the behavior of the physiological organism which is experiencing. This type of psychology emphasizes the *activity* feature in the knowledge situation. The third kind of objective psychology includes in the context of knowledge both the *content and activity* elements. The first emphasizes the stimulus in psychological behavior; the second stresses the response; the third seeks to present a theory which synthesizes both the stimulus and response features. All three views are forms of the psychology known as *behaviorism.* They are, respectively, the behaviorism of E. B. Holt; the behaviorism of John B. Watson; and the behaviorism of A. P. Weiss. Postponing for the time being criticisms of this theory, which identifies mind with physical or physiological events, let us define briefly the three forms of the theory.

1. **The behavioristic theory of E. B. Holt.**—For this behaviorist, who professionally is more appropriately classified with the realistic philosophers than with the psychologists, mind is thoroughly objective. We have already discussed his theory in our epistemological treatment of *pan-objectivism.* For Holt, the realm generally called subjective is the sphere of activities performed by the biological organism. The truest science of the soul is physiological psychology. Holt is not to be classed as a

materialist, however, because, as we have previously indicated, the fundamental world is not physical, but neutral, or logical (in the sense of subsistential).[4]

Holt is not interested mainly in the self as the center of physiological behavior. He is primarily concerned to point out the non-mental character of the entities to which the organism responds. Consciousness is immanent in things. What the mentalist calls contents of mind are features of the environment, selected by the nervous system for attention. Consciousness is not in the skull, not even in the nervous system. It is not there in the realm of external objects. The bifurcation of traditional philosophy of experience into knowledge and the object of knowledge is false. For Holt, a portion of the sky in my thought is exactly the same portion of the sky which is a part of the zenith. Sensations, perceptions, memories, images, even errors and volitions, are all independent of and external to the subjective knower. Consciousness is like a searchlight which illuminates a portion of the environment. As the portion of the environment is not in the searchlight and it is not dependent upon the searchlight, so contents of experience of all sorts are completely outside the sphere of any internal, subjective consciousness.

2. **The behaviorism of John B. Watson.**—When one mentions the term *behaviorism,* the doctrine of Watson is the one likely to be thought of.[5] Unlike Holt, Watson is not preëminently interested in the environment to which the individual responds. Watson is concerned to explain the activity of the experiencing self, not the content of its experience. Like Holt, he denies that there is any such entity as a subjective consciousness, knowable only in introspection. Watson may be called a *metaphysical behav-*

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[4] For E. B. Holt's theories, see ''The New Realism'' (The Macmillan Co.); ''The Freudian Wish'' (Henry Holt and Co.); and ''The Concept of Consciousness'' (The Macmillan Co.).

[5] See ''Behaviorism'' (W. W. Norton and Co., Inc., 1925); ''The Ways of Behaviorism'' (Harper and Brothers, 1928); ''Behavior''; and ''Psychology from the Standpoint of a Behaviorist'' (Lippincott and Co., 1924).

iorist, because he not only denies that the concept of consciousness is useful in psychology; he also denies that it refers to any real entity in the world at all. It is an unnecessary and confusing term. A *methodological behaviorist* is one who agrees with Watson that the notion of consciousness is a hindrance to objective procedure in psychological science, but the methodological behaviorist is ready to acknowledge that the notion, from a philosophical standpoint, may be relevant and valid.

The Watsonian behaviorist would substitute for such terms as *soul, spirit, ego,* and *consciousness,* the term *behavior* as the best notion for the explanation of man. The Watsonian behaviorist, moreover, is only indirectly concerned with the physical or chemical constitution of man. His chief aim is to watch what man does. By personality, Watson means ''an individual's total assets (actual and potential) and liabilities (actual and potential) on the reaction side.'' By assets he means ''that part of the individual's equipment which make for his adjustment and balance in his present environment and for readjustment if the environment changes.'' By liabilities he means ''that part of the individual's equipment which does not work in the present environment and the potential or possible factors which would prevent his rising to meet a changed environment.''[6]

For Watson the goal of psychological study is the ''*ascertaining of such data and laws that, given the stimulus, psychology can predict what the response will be; or, on the other hand, given the response, it can specify the nature of the effective stimulus.*''[7] The word *stimulus* here must be taken in a broad sense to indicate an environment situation, and the word *response* has a comprehensive meaning which embraces a whole reaction system over a period of time. The extreme behaviorist is interested to predict and control human behavior, and believes that, if mechanical categories are applied to the study of human beings, man's activity can be conditioned as proficiently as the motions of a physical machine. The behaviorist, believing that "men are built, not born," asks us to forget about such processes as innate traits, instincts, dispositions, tendencies, and so on. The behaviorist maintains that he can take the "squirmings" of the infant and develop them into an individual of his own choosing. Read his pronouncement: "I find that I can take these squirmings of the new-born—his unorganized finger movements, the movements of his arms, legs, feet and toes, the squirmings in his trunk—and weave them into highly complicated acts of sport, of skill, such as driving a nail with a hammer, carving with a knife, shooting with a bow and arrow, or tennis playing, climbing, crawling, running, and walking. I can take these squirmings of the throat muscles and weave them into those highly organized acts we call talking and singing (and, yes, even thinking). I can take the infantile squirmings of the gut—the unstriped, muscular tissue of the alimentary tract, diaphragm, heart, respiration, etc., and actually organize them into complicated emotional responses we call fears, loves and rages."[8]

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[6] ''Psychology from the Standpoint of a Behaviorist,'' p. 397. (By permission of Lippincott and Co.)

[7] *Ibid.,* p. 10.

To the behaviorist all the reactions of man are combinations of the mechanical units of behavior called *reflex arcs.* The *reflex arc* is the simplest stimulus' response circuit which occurs when impulses are carried over the neurones of the nervous system from a sensory organ to a motor organ. The nature of an individual's selfhood depends upon the kind of integration which occurs between the neurones of his nervous system. The integrating process can be conditioned by our control of the external stimulating factors. According to Watson, the many reactions of man are considered as falling into one of four main classes: (*a*) *explicit habit responses;* (*b*) *implicit habit responses;* (*c*) *explicit hereditary responses;* (*d*) *implicit hereditary responses.* The habit responses are "any definite mode of acting, either explicit or implicit in character, not belonging to man's hereditary equipment.''[9] The explicit types of habit, both verbal and non-verbal, are the overt actions of the body as a whole—actions of the striped muscle system. Implicit habits, observable only with the aid of instruments, are the conditioned reflexes in the glands and in the unstriped muscles, or the actions involving the striped muscles of the throat, tongue, and larynx. An example of an explicit habit would be talking; an example of an implicit, thinking. The hereditary responses, like habits, are differentiated on the basis of physiological structures involved. Instincts are movements principally of striped muscles; emotions are changes of the glandular system. The explicit hereditary responses are the observable sort, as grasping, sneezing, fear, or rage. The implicit hereditary responses are those which include the activities of the endocrine, or ductless glands, and changes in circulation of the blood. These activities are not studied in separation, however. It is physiology's task, not psychology's, to investigate special organs. Psychology must be interested in the activity of man as a totality. The behaviorist is concerned with the relations of the whole organism to the environment at large.

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[8] "The Ways of Behaviorism," pp. 32, 33. (By permission of Harper & Brothers.)

3. **The behaviorism of A. P. Weiss.**—An interesting development of behaviorism is the doctrine of A. P. Weiss, who studies in his purely empirical psychology both the content and activity features of human experience. For Weiss, human behavior is a form of motion, more complex than the motions of physics, but nevertheless part and parcel of the same monistic system (*cosmic movement continuum*) in which the motions of physical entities occur. ''The *Individual* on the basis of physical monism is to be regarded as a locus in this movement continuum and a function (in the mathematical sense) of the changes that are occurring in all other electron-proton aggregates.''[10]

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[9] ''Psychology from the Standpoint of a Behaviorist,'' p. 270.

[10] ''A Theoretical Basis of Human Behavior,'' p. 52. (R. G. Adams and Co., 1925.)

To Weiss, behaviorism is the study of the bodily movements of man which give him status in the social organization of which he is a member. Like all behaviorists, Weiss studies the stimulating, environmental conditions and the neurological, sensory-cerebro-motor conditions. A novel feature of Weiss's theory is the attention he pays to the biosocial responses of the human organism, while still maintaining an interest in man's biophysical reactions. Behaviorism, according to Weiss, must be seriously concerned with investigating the ontogenetic and phylogenetic development of the educational, vocational, administrative, recreational, and personal responses of man, in order to establish fundamental response categories which will make the prediction and control of human behavior possible. The response which has made possible success in the various fields of human activity is the language reaction. Because of language responses man has been able, Weiss shows, to extend the range of his stimulating conditions both in time and space. Language has brought about unity among individuals and has made possible responses of the artistic and esthetic type. Civilization, according to Weiss, is effected by ''the sensori-motor interchanges among the individuals of a social organization'' which ''develop institutions such as the industries, transportation, law, science, medicine, and education. These institutions increase the variety in the behavior of the individual and reduce the limitations imposed by a restricted sensory range, faulty inheritance, restrictive food and shelter activities, disease, and death.''[11]

4. **Criticism of behaviorism.**—A large part of the hostility to behaviorism has not been from the standpoint of its psychological inadequacy. Behaviorism has been seriously opposed on ethical and religious grounds. It has been opposed as a theory which reduces man to a machine and, therefore, negates his freedom and immortality. In the following chapter we discuss in detail these

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[11] *Op. cit.*, pp. 393, 394. (By permission of R. G. Adams and Co.)

ethical and religious implications of personality and need not dwell upon them here. It must be noted in passing, however, that behaviorism does conflict with theories which would regard the human individual as a self-determining and eternal being. The ethical and religious doctrines which behaviorism supports are those of humanism. To the behaviorist, the good of man is best served by neglecting all metaphysical considerations in order to further those conditions which make man more healthy, wealthy, and wise in the realm of the here and now.

The question of the validity of behaviorism will be solved when we solve the issue between introspection and external observation. The behaviorist has served the cause of science and has enhanced the well-being of man by applying experimental methods to human nature. In evading the data of introspection it is questionable, however, whether his position is psychological. Psychology is not physiology. Psychology neglects some of its most important subject matter when it assumes the impersonal, objective approach of physics or astronomy. To refuse to describe the processes of consciousness in sensation, feeling, thinking, and so on, just because they are not out in the arena of public observation would be to avoid investigating the most important features of our whole world. At any rate, to incorporate the introspective method into psychology does not deny one the right to supplement introspection with behavioristic technique. As Professor R. S. Woodworth asserts, "We should be going too far if we followed the behaviorists to the extent of seeking to exclude introspection altogether, and on principle. There is no sense in such negative principles. Let us accumulate psychological facts by any method that will give us the facts."[12] To put the argument another way, behaviorism will be a legitimate psychology so long as it remains a methodological, rather than a metaphysical doctrine. Let us now pass to a consideration of psychologies which combine the introspective and the observational methods.

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[12] "Psychology," p. 13. (Henry Holt and Co., 1921.)

C. Mind according to the Combination Method

As in the case of the other two methods, in this psychological method also there are three standpoints. The first approach, which includes *functional psychology* and *Freudian psychology,* emphasizes the activity feature of experience; the second, *gestalt psychology,* stresses experience as content; the third, *self psychology,* uses the combination method to study both the activity and the content sides of experience. Let us now notice the psychologies which use introspection and extrospection both.

1. **Functional psychology.**—This is, in general, the psychological position of W. Wundt, William James, and John Dewey. The self is regarded as a psychophysical system, constantly adjusting itself to its environment. The mental features of the self are instruments which aid the physical organism to continue as a proficient, living being. Sensations, perceptions, images, thoughts, volitions—all are tools for promoting the total life of the self. The mental elements, however, are not separate entities, associated mechanically into an aggregate of mental states. They are a *dynamic unity,* and only for purposes of discussion may the continuous "stream of consciousness" be divided into specific functions. The pragmatists, with their theory that the process of evolution should be controlled, so that the biological values of the individual and the group may be enhanced, together with their doctrine that ideas are instruments for the control of the evolutionary process, are the philosophers who have made most use of the functional psychology.

2. **Freudian psychology.**—Closely associated in motive with functional psychology is the doctrine of Sigmund Freud (1856–). Both functional and Freudian psychology believe that mind is to aid the individual to meet his environment. There is an important difference in the

theories, however. The functionalist believes that in the highest psychical processes, as in intelligence, mind finds the instrument of control. The Freudian believes that in the lowest psychical processes lie the driving and dominating forces. The Freudians talk about the import of the subconscious levels; the functionalists speak concerning the potentialities of consciousness. Some followers of Freudianism regard the lower elements of experience not only as subconscious, but even as non-conscious. Those of the Freudian school who deny psychical character to the impulses which move human thought and action might well be called behaviorists; their theory is *dynamic behaviorism.* Most Freudians, however, do not deny mentality to aspects of our experience. Their method is often called that of *psychoanalysis.*

The essential tenet of Freudianism is that the determining conditions of conduct are to be found in the blind impulses and instincts of our nature. The power of these unconscious, irrational forces is not found in our moments of reflective activity. Often when we seem to be the most sane we are inhibiting the expression of these deep-seated tendencies. It is in our dream-life, when the *censor* is off guard, so to speak, that we really become aware of our fundamental selfhood. So long as we can express in our normal lives the subconscious strivings we attain proficient personalities. When these desires are thwarted we develop emotional states of fear, morbidity, or inefficacy, called *complexes.* Often these complexes are developed out of interests which, if recognized and accounted for, would lose their influence on our behavior. Psychoanalysis is the technique employed by those who bring out into the open field of awareness the complexes, which, because of their mysterious status, cause unrest and inefficiency in human activity. Persons suffering because of repressed desires often develop what is now known as the *inferiority complex.* The impulse which has received most attention in Freudianism is the sex wish, or *libido.* Art, literature, religion, even industry and science have been explained as *sublimated* expressions of sexual desire. Recent psychoanalytical theories treat sex as one among many of the unconscious driving appetites of man. It is also recognized now that the complexes may often be desirable provokers of socially valuable behavior.

3. **Gestalt psychology.**—Two of the chief exponents of this kind of psychology are Kurt Koffka and Wolfgang Köhler. The doctrine is a protest against extreme analytical methods in psychology. It denies that perception, volitions, and so on, can be explained by reducing them to simple units, which are not perceptional, volitional, or in any sense depictive of a mental product. Analysis destroys the very significations which psychology should present. The gestalt psychologist denies that experience develops by the association of parts into wholes. To the gestalt psychologist the first datum in perception or any other psychological process is a *whole.* Thus the use of the term *gestalt. Gestalt* means *whole,* or *form,* or *configuration.* The term *configuration* is generally used as the best translation. We perceive the field, or shape of the object before we perceive its details. Behaviorism, which explains complex human activity in terms of simple reflexes, cannot make any prediction on its examination of the parts; it is only when the total reaction situation is studied that the meaning of a reaction can be observed. The gestalt psychologist believes that his standpoint is superior to that of the analytical psychologist because the notion of *wholes* is more relevant in the explanation of such phenomena as meanings, values, purposes. Furthermore, the concept of *totality* is more compatible with the idea of unity, present in biological and sociological, and even physical, science. The growth of knowledge is the *articulation* within experience, by which the units in the original manifold are clearly distinguished and their interrelationships with each other definitely recognized.

Gestalt psychology is introspective in the same sense that phenomenology is introspective. The first psychological act is immediate inspection of experience. The *phenomenon* (the pure consciousness of phenomenology) is directly intuited. External observation and experimentation occur in the investigation of the physical and biological conditions and consequences of the phenomenal object immediately presented to consciousness.

4. **Self psychology.**—The self psychologists believe that psychologies which do not have in their theories the concept of an ego, or self, lack an important notion for the explanation of human behavior. We are not only aware of stimuli in our environment. We are aware of our awareness. Consciousness is always the consciousness of some one. That there is an entity which possesses the conscious state, and that this entity organizes experiences into a system are facts which introspection clearly reveals. As J. A. Leighton asserts, "Any theory of experience which fails to take due account of the principle that it is the ego which makes the transitions and recognizes the relations which constitute a 'personal' history is inadequate. *The synthetic function of conscious selfhood remains the central fact in the world of experience.* The individual is an 'I,' a subject of experience, which can never be reduced to the particular and changing contents of his experience. To say 'his,' or even 'its' experience, implies an ego of some sort." [13]

There are four different types of psychology which recognize both introspection and observation and which believe that experiences are always experiences of selves.

a. There is the doctrine of those who regard the self as a soul, or ego, which is independent of bodily activities and even independent of mental states. The self, according to this doctrine, may be related in knowledge to physical and psychical entities, but the relation it bears to these features of reality does not, in any sense, constitute its being. The self is a simple substance, metaphysical and metapsychical in nature. It cannot be observed or introspected. It is the observer and the introspector. It is qualityless and immortal. The eternality of this ego may bring some satisfaction to man's religious sentiment. Such a self, however, is too abstract to satisfy the fullest aspirations of man. Indeed, the notion of a *pure ego* is an abstraction which refers to no actual entity.

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[13] "Man and the Cosmos," p. 323. (By permission of D. Appleton & Co.)

b. There is the notion of the self held by those who regard the self as the psychophysical unity, realized by the interactions of body and mind in a human organism. This is the view of M. W. Calkins and J. A. Leighton. The following quotation sums up adequately the doctrine of those who think of selfhood as the living unity between the physical and the psychical elements of the human individual. The quotation is from Prof. Leighton: ''A self is an organized complex of physiological energies operating through a determinate mechanism and illuminated by a sentient consciousness which rises, through its functions of recognitive and selective memory, selective analysis and synthesis of elements of its experience, to the point of exercising a considerable measure of control in the valuation, direction, and organization of its own native tendencies as well as of its environment.''[14]

According to this view, all selves are products of the reactions of conscious organisms to environmental situations, physical and social. The reactions, in turn, are determined largely by the original biological nature of the reacting individuals. This view, however, recognizes and exalts selves which are more than the products of their environmental and biological conditions. Not all individuals are passive in their responses to the stimulating situations. The reflective selves recreate their environment. Through the powers of intellect they construct theories, laws, principles, and value notions according to which they can control and enjoy their environmental conditions.

c. Another doctrine of the self is that of the personalists, or personal idealists. B. P. Bowne and E. S. Brightman are outstanding exponents of this view. They disagree with the position of Leighton that the self is a dynamic entity which organizes the data of consciousness. To the personalist, the self is not a transcendent principle which as an overruling function synthesizes experiences. According to personalism, selfhood and consciousness are identical. The self does not deal with the data of consciousness; the self itself is the datum. To quote from Professor Brightman, "Self is not a separate and distinct element in consciousness to be distinguished from all other perceptions and thought. It is not a special phenomenon or a sort of atom around which the other atoms cluster. . . . A self, then, is any conscious experience, a process taken as a whole and as experiencing itself."[15] Professor Brightman does not mean here, however, that the self is merely a present experience. Self, as consciousness, persists through time. Memory, reason, and purpose in mind give it unity and continuity. The notion that the self is the only immediate datum is not to be taken as solipsism. The personalist has mediate entities, which give the realm of mind its physical, biological, social, and metaphysical environments. These data, however, are constructs, inferences, or postulates of faith. The personalist believes that consciousness is the fundamental reality of selfhood, but he also believes that consciousness, or self, can refer to objects outside of its own experience. In knowing the outside world the self, or individual consciousness, develops. Ideals are possible as factors in human experience, because they are objective in the world outside of the self, with which consciousness brings us into relation.

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[14] ''Man and the Cosmos,'' p. 311. (By permission of D. Appleton & Co.)

d. The fourth doctrine of the self is that of E. G. Spaulding, one of the new realists. Professor Spaulding finds grounds for belief in the self in the actuality of emergent evolution, or, to use his own term, creative synthesis.[16] For Spaulding, selfhood is the quality of the new level which emerges out of the organization of the mechanical, physical, chemical, biological, and psychological components of the human individual. At each level of increased complexity in the constitution of man a novelty appears. The chemical is unique and cannot be reduced to the physical; the biological is unique and cannot be reduced to the chemical; and so on. Personality is the ultimate and highest novel which emerges from the individual at his most complex stage. Professor Spaulding answers the question, What am I? as follows: ''I am a unit, a personality, with characteristics different from those of all the parts of which I am composed. I am the kind of entity that, historically, religion, art, literature, ethics, politics and philosophy have dealt with. I am not a thing, but a value, like goodness and beauty and truth.''[17]

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[15] "An Introduction to Philosophy," p. 191. (Henry Holt and Co., 1925.)

5. **Criticism of the joint method in psychology.**—Functionalism and gestalt psychology are advancements over the purely introspective and purely experimental psychologies. In the first place they admit both mentalistic and mechanical conceptions and are, therefore, comprehensive standpoints. Furthermore, they do not divide up experience into abstract units which have little, if any, psychological significance. The functional psychologist treats the activity side of experience as involving the total individual, and the gestalt psychologist treats the content side of experience as being a meaningful whole. The former, however, is likely to regard the stimulus of human activity as being too chaotic. The functionalist exaggerates the importance of problems, forgetting that much of our mental life is of the esthetic sort which represents no conflict in mind at all. The gestalt psychologist, on the other hand, is wont to stress the orderliness of the outside environment. The stimulating conditions are hardly as systematic

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[16] See ''What Am I?'' Ch. I (Charles Scribner's Sons, 1928); and ''The New Rationalism,'' Chs. XLIV, XLV (Henry Holt and Co., 1918).

[17] ''What Am I?'' p. 31. (By permission of Charles Scribner's Sons.)

as the "configurations" in experience seem to suggest. Moreover, functional psychology and gestalt psychology imply a purposiveness and order, not intelligible without the assumption of a teleological principle, or self, in experience. Now is the concept of the self permissible in psychology?

It must be admitted that the doctrine of the self gives a metaphysical character to psychological investigation. To postulate a permanent reality which underlies and relates our mental states or physical responses is to go beyond the limits of science. If the self psychologist replies that the self to him is an immediate datum of experience just as valid as any other object of introspection, his opponent will retort that no amount of introspective analysis has ever disclosed to him the existence of an entity independent of the processes and products of experience themselves. It seems feasible for the philosopher to emphasize the fact that, although scientific psychology may not have any empirical and objective evidence for the self, there are good reasons why the psychologist should not deny its existence altogether. The psychologist is logically bound to acknowledge a unifying principle, like the self. Unless there is an entity making for continuity in experience we could not recognize memories as past experiences of our own; we could not use past experience in the interpretation of the present; we could never compare ideas in the way constantly employed in the processes of reasoning. The psychologist cannot discuss experience in any comprehensible fashion unless he regards the experiences as being the contents of the consciousness of some particular self or selves.

The main reasons for believing in selfhood are not based on the logical folly of denying selfhood. We need the conception of selfhood for axiological reasons. As was said in the beginning of this chapter, the self is not primarily a fact. It is a value. The notion of selfhood is necessary, if some of the deepest sentiments of the human heart are to be vouchsafed. If selfhood is fallacious, then community, human purpose, fellowship with God, immortal life, are all ideas without foundation. If personality is a delusion, then to speak of the universe as good, true, or beautiful is foolishness.

Whether or not man has a right to interpret entities in terms of their worth as well as in terms of their factuality, is a question we discuss in Chapter XVII. Whether or not the self is an entity which man can regard as worth while in the light of his profoundest aspirations, is a question with which the following chapter seeks to deal.

Before concluding the present chapter we wish to examine another phase of the body-mind problem. We have been paying considerable attention both to physical and psychical features of experience. Is one feature the product of the other? Do they interact? Are they aspects of a third entity? Questions such as these now call for consideration.

III. The Relation of the Psychical and the Physical Features of Selfhood

What we have to say in this section will largely be the implications of ontological theories previously discussed. The relation between body and mind in the individual is treated in the same way as the relation of the physical and spiritual principles in the world as a whole. To state the arguments for the psychological positions with respect to solution of the body-mind problem would be to repeat arguments already presented in our ontological considerations. We shall, however, indicate the various psychological approaches to the problem, suggesting with what ontological conception each is associated.

There are two types of solution to the body-mind problem: monistic and dualistic. Let us examine each type.

A. Monistic Solutions of the Body-Mind Problem

Three kinds of monism are presented to settle the problem regarding the relation of the physical and psychical in the human self. They are *psychical monism, physical monism,* and *neutral monism.*

1. **Psychical monism.**—This doctrine asserts that only conscious selves are real. It corresponds to extreme subjective idealism in ontology. Nothing which is other than mental exists. This conception has no standing in scientific psychology. It could have validity only for a mystic, for whom physical entities had lost all their objectivity and reality. It is conceivable that an Absolute or Universal Experience might be purely subjective, with no Other than itself. For finite selves, the denial of an external object, apart from consciousness, is manifestly a neglecting of certain portions of experience.

2. **Physical monism.**—This is the position of behaviorists, the materialists of psychology. The self is the physiological organism. Mental processes are not products of physiological reactions; they are the physiological reactions themselves.

3. **Neutral monism.**—This is the psychological conception which corresponds to the double aspect, or identity, theory in ontology. Mind and body are aspects of a third entity. This third entity is called *neutral* because it is either physical or psychical. The view which one takes of it determines whether it will be considered as material or as mental.

B. Dualistic Solutions of the Body-Mind Problem

Interactionism, parallelism, and *epiphenomenalism* are the dualistic versions of the relation between body and mind.

1. **Interactionism.**—This psychological theory is the corollary of classical dualism in ontology. The theory holds

that mind and body are two distinct, separate features of selfhood. They interact, however, in the sense that they reciprocally influence each other.

2. **Parallelism.**—Like interactionism, parallelism treats the self as being twofold. Mind and matter, however, do not interact, for the exponent of parallelism. This theory is the psychological phase of Leibnitz's ontological doctrine of monads. Leibnitz denied any causal connection between body monads and mind monads, as we have already learned. There is a one-to-one correlation between mental and physical phenomena. Leibnitz explained the remarkable correspondence between body and mind on the basis of the principle of preëstablished harmony. God himself is the author of this system whereby physical and psychical events can occur without interference. If mind does not causally affect matter, or if matter does not influence mind, one wonders why God chose to create two substances in the first place. Furthermore, there are many physical events which seem to have no mental correlate, while there are also many psychical phenomena which do not appear to correspond to any physical process.

3. **Epiphenomenalism.**—This theory is a dualism, in that the two substances are recognized as existing. For the epiphenomenalist, however, one of the substances is subordinate to the other. Either mind is regarded as the by-product of matter, or matter is considered to be the by-product of mind. Psychological epiphenomenalism, which regards the physical features of human selfhood as determined by the mental phenomena, corresponds to the ontology of traditional theology. According to historic theology, creation is the making of physical events by fiat from spiritual principles. Faith healing might be considered as an illustration of idealistic psychological epiphenomenalism. Without entering into an argument concerning the validity or invalidity of faith healing, it may be stated that to the exponent of this technique mental attitudes are thought to have an effect upon the nature of

physiological organs. Epiphenomenalism, however, is generally associated with materialistic notions. Mind, or consciousness, is explained as the ineffectual consequent of brain functioning. Mental states are not denied. They are allowed an existence, but they are not considered as determining the movements of the biological individual or as having any effect upon the environment of man. This doctrine represents a transitional stage between interactionism and physical monism.

Recently there has appeared *a new type of epiphenomenalism.* It is *the doctrine which corresponds to emergence in ontology.* Mind is the product of matter, but mind, as product, is superior to matter, as producer. The theory is naturalistic, but it is a sublimated naturalism. The theory of emergence in psychology, although materialistic, does not offend the religionist and idealist as did the old materialism. If entities as glorious as human hopes, purposes, and reflections can emerge from physiological organization, then the body of man certainly cannot be vile. This psychological theory is subject, however, to the same criticisms which have been presented against the notion of emergence in ontology.

4. **Productive interactionism.**—The view of the relation of body and mind which we would support is a type of interactionism. It is not a dualism, however, which regards body and mind as equivalent in existential or value character. The self is the scene of the interaction of mind and body, but the mind is superior in make-up and in worth to the body. As W. E. Hocking declares: "The human self is more than a thing of nature, because it is more than a fact; facts are not conscious of facts,—the self is; facts are not values,—the self lives on values and is a value; facts are particulars, not universals,—the self is both; facts are present,—the self spans past and future. And because of these things, while facts are as they must be, the self is free; it determines, out of a matrix of plural

possibilities, which one shall be the fact of the next moment.''[18]

Personality is inseparable from physical concomitants, to be sure. Even the theological creeds which have exalted the free and eternal character of selfhood have not attempted to present a resurrection which would not involve the resurrection of the body. But to say that the self has a biological context does not mean that it is solely biological. There are other interactionisms than the psychophysical one. The self has connections with other features of reality, as physical nature, esthetic forms, ethical ideals, social institutions, and God. The physiological explanation of self is interesting and important, but aspects of reality more remote also enter into the experiences which make up our conscious life. We are now ready to discuss these other elements of human experience.

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[18] ''Types of Philosophy,'' p. 442. (Charles Scribner's Sons, 1930.)

Chapter XVI

THE INDIVIDUAL AND HIS PLACE IN THE WORLD

THE last chapter dealt with the individual as an entity in himself. The discussion had to do with the constituent characteristics of selfhood. The present chapter is concerned with the relations which the individual self bears to its environment. To what extent is personality determined by physical, biological, and social factors? To what degree may the self act independently and creatively? Is the self immortal, or do its mechanical and material conditions preclude the eternal continuance of any metaphysical ego? These are the sorts of questions which now command our interest.

It is frankly acknowledged that the concern to regard the human self as unique, free, and immortal betrays the influence of sentiment in philosophical speculation. Our reply is that a philosophy which would be synoptic must incorporate into its conceptions the emotional as well as the empirical approaches to reality. Philosophy claims that the realization of the intellectual and scientific interests is no more imperative than the satisfaction of other motives of human life. The philosopher, with all his allegiance to the dictates of scientific method, makes no apology for admitting also into his total philosophy the reactions of poets, prophets, and priests. Such reactions, when they do not contradict the findings of authoritative science, enhance the esthetic, religious, and moral interests of man. In short, they give a nature which he can contemplate as well as control. They present him with a reality which he can enjoy as well as explain. They supplement validity with value, they fulfill wisdom with worth.

To interpret human personality in terms of esthetic ideals and religious faith may seem to be a presumptuous procedure. But, if it is not legitimate to regard the self normatively as well as descriptively, then any attempt to regard the cosmos in terms of value is the height of arrogance. All the hopes of man's heart, which clothe the world with beauty and worth, are justified only to the extent that an axiological view of finite personality is justified. If the human self is not rational, free, and immortal, then there can be little reason or pleasure in seeking unity, spirituality, and permanence in the world as a whole. If man is not a free individual, then to believe in cosmical personality is to cherish an extravagant romanticism.

The present chapter will consider the self from two main standpoints. In the first place, we shall regard the self as the *creature* of conditioning factors. In the second place, we shall treat the self as the *creator* of conditioning factors. To fully recognize that the self is, to an extent, part and parcel of a naturalistic scheme of events, but to adequately show that it is also, to an extent, independent of mechanistic nature, is the twofold aim of the ensuing sections.

I. The Self and Its Surroundings

With all due respect for the axiological demands which require man to be regarded as a free and immortal individual, we must recognize that the human self is largely a product of external determinants. Man is, to a considerable extent, the outcome of three very important stimulating situations. These environmental conditions do not wholly explain his nature, but no explanation can be true which neglects to take account of them. The influences are the physical, biological, and social forces, which measurably determine his life and living. Let us examine each of these three types of influence.

A. The Self and Its Physical Setting

What bearing upon selfhood have physical things? How are our personalities affected by the spatial objects about us? Does temperature have anything to do with temperament? Does climate influence character? Is selfhood altered by scenery? Just to note these questions brings to our minds at once instance after instance of the influence of the outside world upon our thoughts, feelings, and deeds.

An important school of thinkers has maintained that the lives of individuals and of peoples are chiefly to be explained in terms of their physical environment. Human history, according to this group, is mainly the result of physicogeographical forces. Montesquieu, Buckle, Ratzel, Semple, Lombroso, and von Treitschke are outstanding exponents of the doctrine. The direction of civilization is accounted for by such factors as climate, soil, contour, fertility of soil, and the possibilities of commerce and communication. The early civilizations of Egypt, Mesopotamia, and China are explainable by the fact that they developed in fertile river valleys. The intellectual and artistic glory of Greece is intelligible only when we appreciate the blue skies and beautiful scenery of this favored land. The temperamental differences of peoples in the north and the south of Europe, as well as the psychical differences of people in the north and the south of our own country, are to be explained largely in terms of climatic and geographical contrasts. The Darwinian principle of natural selection, even if it does not account for the appearance of variations in species on physicogeographical grounds, certainly does regard these forces as highly important in explaining why only some, among all the variations, persist.

The extent to which we attain complete personality is measured by the extent to which we employ, control, and appreciate the phenomena of nature on all sides. Without a physical environment there would be no sense perceptions; without sense perceptions, no art, philosophy, religion, or science. Metaphysics, without physics, would be neither true nor interesting—in fact, it would not be possible at all. We believe that the realm of the spirit is unique, beyond matter, and superior to mechanism. But we cannot escape the fact that to describe the glories of the spirit we are often forced to use analogies and figures which find their origination in explanations of physical objects in the world of place and time. We speak about the wideness of love, the depth of sorrow, the length of mercy, the strength of sin, the force of will, the straightness of morality—all ascriptions of spiritual relevancy, but all based upon our knowledge of the material world.

B. The Biological Basis of Selfhood

In general, we do not regard the biological nature of man as a part of his environment. We usually speak of heredity and environment, as if the latter were entirely different from the former. It is true, however, that biological factors are external conditions which vitally affect the nature of selfhood. Unless one takes the extreme behavioristic position that a person is identical with his biological organism, or unless he takes the extreme spiritualistic standpoint that a person is completely independent of his biological organism, one must regard the self as appreciably the product of a biological situation. One's biological nature is much more intimate than his physical environment, but, after all, we do not select our heredity, and our biological constitution, even though it does not preclude our freedom, determines frequently the type of acts we, as self-determining agents, perform.

We have already discussed the importance of inherited tendencies as sources of knowledge. Instincts, emotions, and capacities are not reflective levels of knowledge, but the various kinds of thinking which occur in different individuals can be explained by variations in these fundamental, innate propensities. Native traits can be altered, developed and specialized, but they cannot be totally eradicated. Personality is, for the most part, the organization of acquired physical and mental habits, but our inherited capacities determine the extent to which the process of attaining habits can go. The moral character which a person possesses is almost entirely the result of the organization, direction, and sublimation of the unconscious impulses which give dynamic urge to his life. W. K. Wright describes the influence of native tendencies upon personality as follows:

> For an individual to possess an unusually vehement impulse—especially if it is pugnacity, sex, or self-assertion—may well prove to be his moral ruin; but if he can learn neither to give it free rein, nor yet to suppress it or dissociate it from his other impulses, but to coördinate it with other interests and activities in individually and socially beneficial channels, such an impulse may enable him to be an effective and perhaps a great man in his generation. Pugnacity and self-assertion, rightly directed, may make a man a great constructive leader in all righteous conflicts. Sex energy diverted—the technical term is *sublimated*—into other than its spontaneous channel of expression, may make a person a successful poet, musician, religious leader, social worker, or athlete. Strong primary impulses furnish the driving power for great talents. The nations that have contributed most to human progress have had for their leaders men with strong primary impulses.[1]

Not only is the self the product of the expression and control of inherited psychological forces in the organism, it is also a consequence of the general biological status of the organism. What a difference age, disease and physical disability make in personality! Happiness is, more than we realize, a matter of health. *Der Mensch ist was er isst* is a good proverb as well as a good pun. The prescientific classification of human beings into the sanguine, melancholic, choleric, and phlegmatic is a testimony of the traditional association of personal traits with supposed bodily humors. The differences between the temperaments of men and women are readily acknowledged as differences based almost entirely upon physiological and anatomical differences in the sexes. Recently we have learned that a great deal of man's psychological nature is determined by the chemical constituency of his blood. Changes in the bodies and the minds of individuals are produced by variations in the secretions of the thyroid, suprarenal, pituitary, adrenal, interstitial, and other ductless or *endocrine* glands. The strength and nature of one's emotional responses are dependent upon the proficiency of his ductless glands. A man's valor may be stimulated by an increase of the sugar content in the blood, an increase which is produced by the secretion of adrenalin. As E. E. Slosson wittily puts it, "Courage is not a matter of 'sand,' but of sugar."[2]

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[1] ''General Introduction to Ethics'' (1929), pp. 203, 204. (By permission of The Macmillan Co., publishers.)

Finally, there is a connection between the intelligence of man and his inherited biological constitution. Intelligence is not the same as instinct, however. Intelligence refers to the response system of an individual, which has been built up—that is, learned—in his interaction with his physical and social environments. The powers of sensitivity, retentivity, and concentration, upon which intelligence largely depends, are, nevertheless, generally native and are subject to very little modification. All persons grow in intelligence with the years, but the rate of their growth is set largely by the adequacy of their inherited physiological apparatus. Mental defects are usually symptomatic of inferior conditions somewhere in the family stock. It is a seemingly valid truth that, however favorable one's environment may be, there is a certain limit to his intelligence, fixed by the efficacy of his brain and nervous system. This is not a fact to cause alarm, because rare indeed is the individual who has ever begun to realize upon the intellectual potentialities provided for him in the powers of his physiological nature. Not only is the general intelligence of man correlated with his brain functions, but there is also a connection between his brain and his various aptitudes. Aptitudes, such as interest in art, music, invention, oratory, business, and so on, are dependent upon the type of environmental stimuli to which individuals respond. The stimuli which attract are, in turn, dominating because in different individuals different parts of the cortex are receptive to stimulation. The behaviorist denies this explanation of aptitudes in terms of different cortical centers, but even the behaviorist has to admit that the type and proficiency of a personality depend upon the sufficiency of the fundamental system of reflex arcs. With all his emphasis upon environmental stimulation and the conditioning of responses, the behaviorist cannot develop a successful personality out of a subnormal biological organism.

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[2] "Feelings and Emotions," *Wittenberg Symposium,* p. 443. (Clark University, 1927.)

C. The Self in Society

Beside the physical and biological situations, which seem to preclude all hope of believing that man is free of external conditions, there is the social context, which also is a determining influence in human behavior.

The effect of social environments on individuals is a matter of common recognition. We are all aware of the differences of persons from the country, the small town, and the metropolitan city. It is not difficult to distinguish children brought up in homes of culture from children whose home life has been void of all elements of refinement. There is a noticeable dissimilarity between students of the old, fashionable, private schools of the East and the students of the new democratic public institutions of the West. The effect on the moral and theological outlook of years of devotion to a certain ecclesiastical group is frequently noticeable. People who have lived in exceptional epochs of civilization have found their thoughts and enthusiasms determined by the intellectual movements of their day. The enlightenment of early Athens, the Renaissance of Italy, the industrial revolution of England were all periods of thought and activity which stimulated and enhanced the consciousness of the individual man.

Not only is the moral character of an individual largely determined by his social environment, but the very recognition that he is an individual is the result of interactions with other members of the community. The infant develops the notion of his own *ego* through the awareness of other *egos.* His movements and intentions are thwarted by others, and the inhibitions produce in him the consciousness of himself as a center of wishes and deeds. The opposition of other personalities is a condition which, for better or for worse, strengthens within us the experience of self-consciousness. Sometimes it is not conflict with others so much as it is the support or sympathy of others which promotes in one an appreciation of his own private, personal existence and worth. Sometimes it is the membership in a community which gives to one a sense of personal value. Belonging to a regiment, a lodge, a state, or a church bestows upon him a prestige which brings to the individual a feeling of individual importance.

Some philosophers have become so enthusiastic over this notion that an individual realizes worth in a social whole that, in order to explain the phenomenon, they have interpreted society as a person which imparts to its constituent members the attribute of personality. This is the standpoint of traditional absolute idealism. It is permissible, however, to conceive of an individual as receiving significance and as attaining powers through association with other individuals, without regarding finite selves as interpenetrative fragments of one, all-inclusive, real self. Community ideals, social will, national honor, international purpose are all realities. They are forces, however, which are resident in separate consciousnesses, and are not the psychological motives of a cosmical, unitary Over-Self.

This view that communal ideas are the product of intercommunicating and coöperating selves is not intended to deny the fact that one of the selves may be the divine Self, or God, in whom the experiences of the other selves can find meaning, value, and conservation. In fact, only when we postulate a divine Self as the inspirer and sustainer of finite selves, do the moral, scientific, religious, and esthetic attainments of man seem intelligible and rational. In closing this section on the influence of social factors on human behavior, therefore, we would include in the societal circumstance the presence of God as the source of our highest cultural values.

We have indicated in the previous chapters that man is determined, in his thought and activity, by the physical, biological, and social conditions in which he finds himself. To put it shortly, he is the product of heredity and environment. Our immediate problem is to examine the nature of selfhood to learn whether or not heredity and environment completely explain human consciousness and conduct. The idealistic philosopher has always hesitated to believe that man is merely a biological organism, explainable in terms of the concepts of mechanism and materialism. The religionist has always insisted that man is free and that he is immortal. Are the idealist and the religionist correct in their assumptions?

II. The Freedom of the Self

No problem has been more persistent in philosophy than the question of the freedom of personality. In spite of the theoretical character of the problem man has been enthusiastically engaged with it for centuries. For, after all, the issue is not one of merely academic import. Our systems of theology, politics, economics, criminology, and education are based upon the primary ways in which man has met this historic query.

A. The Meaning of Human Freedom

The problem of freedom has not been a simple one. There are different kinds of freedom. Let us notice what the chief kinds are.

1. **Psychological freedom.**—This is the sort usually emphasized and examined in philosophical literature. It has generally been called *freedom of the will.* To be psychologically free means that there are real alternatives among possible human actions and that the action to be executed may be selected and carried out through the instrumentality of an individual's own conscious effort. G. H. Palmer has defined this type of freedom as "self-guidance through which, for purposes of our own, we narrow a dual possibility to a single actual result."[3]

Psychological freedom is generally called *indeterminism* and is opposed by the doctrine of *determinism.* The following quotation from W. G. Everett is an excellent statement of the meaning of determinism:

> The deterministic view maintains that all events in man's mental life, equally with events in the physical world, must be conceived as antecedentally conditioned, as having their origin in preceding events of which they are the necessary sequence. Applied to conduct, this means that any act, whether good or bad, is the necessary result of the inner nature and outward circumstances, in other words, of the total character and environment of the actor. One's character and environment are regarded by the determinist as the product of conditioning forces which reach back in an unending chain of succession. This position means that if we had a full knowledge of the antecedent of any act, as in practice, of course, we cannot have, we should understand the act, and should see why the act is just what it is.[4]

When determinism is regarded as the method of God in his management of the world we have the position, usually associated with the theology of John Calvin, called *predestination.*

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[3] "The Problem of Freedom," p. 18. (Houghton Mifflin Co., 1911.)

[4] "Moral Values," pp. 335, 336. (Henry Holt and Co., 1928.)

2. **Ethical freedom.**—This kind of freedom is a development out of psychological freedom. The moralist studies the implications of determinism and indeterminism to ascertain whether man is responsible or not for certain of his acts. The presupposition back of this examination is that there cannot be a true moral act if the individual who performs it is not responsible for its execution. A person asleep or under anesthetic, a very young child, an idiot, and one in an hypnotic state are not ethical agents, because they do not act on the basis of rational will and free choice. One of the most difficult problems in the field of ethical responsibility is that of determining in cases of crime whether or not the individual on trial is, as we say, a free moral agent and, therefore, justly subject to punishment.

There is another sort of ethical freedom. This is the freedom in which individuals of normal intelligence and will are involved. They have noble purposes, but economic, political, and other circumstances inhibit the attainment of the aims set up. Persons often are highly responsible individuals, but they do not enjoy the opportunities for self-expression. Economic freedom, political freedom, and religious freedom are prominent phases of ethical freedom. Discussions of ethical freedom are very instructive in pointing out that psychological freedom is never absolute. Freedom of choice and response does not mean caprice, or complete independence of conditioning factors. It means rather the recognition and employment of, rather than the repudiation of, the forces of physical, biological, and sociological nature. There is only one kind of consideration in which the self might be entirely detached from conditioning factors. This would be a theory which views the ego as in some eternal, heavenly realm, completely independent of spatial and temporal circumstances. This sort of freedom, however, is better denoted as *immortality*, and we are, therefore, postponing our examination of such freedom until we study the problem of the self as an immortal soul.

3. **Biological freedom.**—To some thinkers, the freedom of personality does not mean freedom of choice but the possibility of realizing, in physiological reactions, some of the fundamental drives and interests of the organism. Individuals are regarded as possessing dynamic urges which separate them in nature and performance from other individuals. Freedom is the vitality and proficiency manifest in beings whose primary impulses find ready expression. The exponents of this sort of freedom point to the biological processes of growth, metabolism, regeneration of defective organs, and reproduction as instances of driving and directing powers in the organism not explained in terms of mechanism. The vitalists, voluntarists, and Freudians all stress this type of freedom. Henri Bergson is an outstanding representative of the standpoint. It may be non-mechanical; it may argue for teleology in organic nature. But so far as the question of choice is concerned, the biological theory is really a type of determinism. Freedom implies more than spontaneity in a self.

4. **Intellectual freedom.**—This kind of freedom is emphasized by those who recognize the universality of natural law. They admit that man is but one feature of a great system of interacting causes and effects. They acknowledge the validity of determinism. Freedom, from this standpoint, comes with the appreciation of the absolute rule of necessity. To know our place in a law-abiding universe brings, they say, a sense of peace and strength. We may not be able to control natural phenomena or human behavior, but we can understand the activities in nature and in man. This understanding will give us a feeling of resignation, which, strange to say, is an enhancing and empowering emotion. The ancient Stoics were the chief proponents of reason as a way to freedom. Spinoza is the outstanding modern philosopher who calls man to an experience of freedom by asking him to attain to the true

rational insight that all is law. This is a determinism the sting of which is removed because it is the Universal God who is the great determiner. But however high and holy a determinism may be, so long as it is a determinism, it negates the freedom of the individual self.

5. **Esthetic freedom.**—This kind of freedom is very similar to the one discussed immediately above. The believer in esthetic freedom, however, finds freedom in emotion rather than in reason. Psychological and ethical freedom are acknowledged to be groundless. Man cannot but admit his inability to control his psychophysical being. Freedom must come, therefore, in escaping from the practical problems of human direction and reformation in order to dwell in a world of ideal values, like truth, goodness, and beauty. Art, literature, and music provide for us a sphere in which we may find contentment, in spite of our necessary connections with a world of brutal facts. Schopenhauer and Bertrand Russell are leading exponents of this contemplative road to freedom. ''To abandon the struggle for private happiness, to expel all eagerness of temporary desire, to burn with passion for eternal things—this,'' affirms Russell, ''is emancipation, and this is the free man's worship.''[5]

6. **The freedom of postulation.**—This notion has been popularized by William James. As we have already observed, James was opposed to any sort of singularistic absolutism. He wanted a world of novelties, discrepancies, activity, and change. Pluralism permitted James to believe in human freedom, but he espoused freedom on ethical grounds. Unless freedom is a reality, then adventure is a delusion, and if adventure is a chimera, then true individuality is impossible, according to James. The glory of life, to James, was in the element of risk and in the necessity of faith. James advises belief in freedom because such a conviction brings courage and freshness to

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[5] ''A Free Man's Worship,'' essay in ''Mysticism and Logic,'' p. 55. (Longmans, Green and Co., 1918.)

experience. We have a right to so believe and should have the will to do so. No scientific theory contradicts the possibility of freedom. Pragmatically, therefore, since the belief in freedom is more beneficial to man than is the contrary assumption, one would be foolish to support determinism. Kant espoused generally a very different philosophy from that of James, but he agreed with the great American philosopher that man has the privilege, on moral grounds, to go beyond pure reason and its realm of determinism, to affirm on the basis of practical reason the reality of free personality.

7. **The freedom of absolutism.**—James found the foundation of freedom in the reality of pluralism. The absolute idealists find in monism the justification for a belief in freedom. The position of absolute idealism is an extension of the principle of biological freedom. Freedom is an expression in the individual not merely of biological urges; it is the expression in the individual of cosmical ideas and motives. The world comes to consciousness and activity in the finite self. We are dependent upon the absolute, but it is also true that the absolute is dependent upon us to the extent that we are agents in the universe. Freedom, however, is truly found only in the whole reality, because it is only the whole which is independent of other beings outside of itself. Finite beings have a degree of freedom; the absolute alone is completely free. Practically, freedom, to the absolutist, means devotion to and execution of the will of a community, whether it be the family, state, or church. The most significant freedom would be that which represents the carrying out in an individual of the most comprehensive community. For example, in loyalty to the universal, or, as he calls it, the beloved community, Josiah Royce affirms the freedom of personality to lie. Others who have been great exponents of this kind of freedom are Hegel, T. H. Bradley, and Bernard Bosanquet. Their doctrine does substantiate freedom of the self, if freedom means membership in a worth-while community. But their

theory is hard to reconcile with any conception which insists upon the status which we have called psychological freedom.

8. The freedom of personalism.—To the personalists, freedom is the preëminent prerogative of selfhood. James Ward, B. P. Bowne, and E. S. Brightman also insist that personality is impossible if an individual is not a distinct, independent center of consciousness. Personalists recognize the place of conditioning factors in experience, but these factors are not fundamental, because the phenomena of physics, biology, and sociology are, after all, constructions of mind, arrived at after intercommunication between rational selves. The realms of physical, organic and social nature are inferential. The basically real beings are the centers of consciousness, divine and human. Some personalists are pan-psychists and grant to the subhuman levels grades of consciousness. Personalism has always been closely associated with theism. Personalists have insisted that only on their assumption of human freedom can the self be considered immortal, progress be regarded as real, and the actuality of evil be reconciled with the goodness of God.

9. The freedom of emergence.—The holders of emergent evolution acknowledge determinism in the physical, chemical, and biological levels of the self, but in the level of psychology a new type of reality is affirmed, the laws of which cannot be reduced to the categories of the lower levels. The psychological level, or the self proper, is a novelty with principles of its own. This is the realistic notion of freedom, based on the theory of creative synthesis—the conception that a whole is more than the sum of its parts. E. G. Spaulding, as we have seen, is one of the chief champions of this type of free personality. S. Alexander presents an interesting view in this general notion of freedom as an emergent. Like Spaulding, he holds that every level has its own laws and principles. Freedom comes with the *enjoyment* an individual has when it experiences its own nature. Things *contemplate* levels below themselves; they enjoy their own level. Freedom, which is a prerogative, not only of human beings, but of all existents, is, to use Alexander's term, *enjoyed determination.*[6]

Having indicated the different interpretations of freedom, let us consider the validity of the notion of free personality. Certain of the ideas of freedom, discussed above, need no defense. They represent conceptions in which the very definition of freedom is made to comply with and apply to actual facts, as for instance, the notion that freedom is the expression of biological drives. Again one cannot debate the reality of freedom if freedom is the sense of peace which one gets in esthetic contemplation. Our reaction, however, is that the psychological idea of freedom is the fundamental conception. Unless freedom, in the sense that man has some power of self-determination, is justified, then all the other types of freedom are weak substitutes. Our discussion of the validity of freedom will center, therefore, about the conflict between the determinists and the indeterminists.

B. The Validity of Indeterminism

Let us present the case for freedom first of all by pointing out certain defects in the standpoint of the determinist.

1. **The methodological difficulties of determinism.**—The determinist argues that his point of view is compatible with the whole scheme of science. The postulates upon which science has been established all favor the principle of determinism. The *uniformity of nature* notion requires that the future be explained in terms of the present and the present be explained in terms of the past. How could this be possible if, in the system of nature, individuals were free to react independently of the causal conditions? The *postulate of sufficient reason,* so important in science, also

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[6] See "Space, Time and Deity," Vol. II, pp. 331–333. (The Macmillan Co., 1920.)

discourages belief in indeterminism. Science believes that for everything in the world there is a reason, that things are joined together in a causal relationship in which all things are interdependent—that no novelty or uniqueness can in any sense be of interest to science. The third postulate of science, the *law of parsimony,* is another conception supporting determinism. When we can explain man's behavior in terms of mechanical, physical, or physiological forces, to bring into our explanation such entities as creative spirit, choosing will, or free determination, is foolish and futile, if not downright false.

The defender of free will will reply to this enthusiasm for scientific presuppositions that the presuppositions themselves refer only to certain aspects of the world. It is to be admitted that mechanical nature is uniform, that a machine is predictable in its movements, but what right has the scientist to say that nature or man is only a machine? To say that man must be completely determined by outward forces, because of the uniformity of nature, is to beg the whole question at issue. The question is really, Is nature uniform? The law of sufficient reason again, when used as an argument against freedom, is nearly another case of begging the question. It is acknowledged that many events in man's reaction system are totally explainable in terms of antecedent conditions, but there are so many behaviors for which we have no explanatory concepts that represent unique, novel appearances, that we have reason to doubt any universal infallibility to the concept of sufficient reason. The law of parsimony, that nature is frugal with her causes and that our explanations should be as simple as possible, may make for proficient science, but the prophet, the poet, the priest, and the philosopher will always insist that a description of nature in terms of mechanism and mathematics robs reality of its true richness.

The exponent of determinism argues also that his point of view is the most advantageous for controlling human behavior. To get rid of disease, you must recognize the fact that disease comes from outward physical or inward physiological conditions, says the determinist. The same is true in regard to ignorance. Ignorance is not indicative of faulty motive or feeble character so much as it is a testimony to the fact that individuals live in faulty cultural environments and are handicapped by defective physiological apparatus for learning. The determinist explains sin in the same way. Sin is not moral deficiency. It is a non-moral misfortune. Judas and Jesus are different because their environmental stimulations and their biological endowments were different. The latter, of course, according to the determinist, is the more valuable individual, and the former is a deplorable instance of selfhood, but Jesus is not to be morally praised nor is Judas to be morally blamed. Moral ascriptions are vestiges of a theory of man pertinent to a prescientific and animistic era. According to the determinist, will, motive, or intention must be left out of discussion in criminal courts. Instead of holding man morally culpable, and therefore punishable for his crime, we must look to his social, biological, or physical stimuli of behavior to account for his deed. Instead of punishing him we should remedy the conditions in his own body, or in his environmental situation, which have caused the crime.

In answer to this point of view, the indeterminist will readily admit that there is a good deal of truth in the determinist's contentions. The most staunch believer in free will will seek for himself and his family a physical, social, educational, and political environment which is the most satisfactory. No believer in free will believes that man is completely free, that in any environment and with any sort of physiological endowment, man can still do what he wills. Such a belief would not be a belief in freedom, it would be a belief in caprice. In a world where anybody could do what he wanted, in which ideals have no objective standards to which they conform, there could be neither safety nor happiness for mankind. The opponent of determinism, however, has a feeling that too much is made of the dogma of controlling human nature. The free-willist believes that the human spirit will rebel against the scientific theory of domination or of scientific control just as quickly and as strenuously as it will rebel against a political or economic tyranny. Furthermore the exponent of free will will insist that efficiency and progress are not the only criteria of success in human personality. Perhaps it is better for a man to slowly, tediously work his way through to self-realization than to have the goal and the method of its attainment prescribed to him wholly by others. The human selfhood should be an object of reverence, contemplation, enjoyment, love. Life is more than biological sufficiency. A man possessing the proficiency of a machine would be of high economic worth, but he could hardly be or have a friend.

The determinist talks about causation and evolution in dogmatic terms. He talks as if causation were a great cosmic force, manifesting itself in an army of subsidiary causal agencies making for a universe of tremendous unity and nicety. He regards the universe as a system in which we must fit in as cogs in a great ''cosmic movement continuum.'' He also thinks of Evolution as a great power, endowing it with the status indicated by the capital *E*. He treats it as a force of universal proportions, pushing everything its way, and making everything subscribe to its momentum. These interpretations of cause and evolution, sometimes held by the determinist are, of course, not good science. Causation, for science, is not a force. It is a category of human intelligence, used to describe the way in which events occur in the world. It is not even the only category of explanation, and we find in science to-day other concepts of explanation just as frequent, but of the opposite connotation—for instance, coöperation, organization, creativity. Evolution also is no causal power in science. It is a term to express *how* the universe behaves.

It is just as legitimate to explain the *why* of the world in terms of purpose and God as it is to explain its method and structure in terms of mechanism and matter.

The notion of physical science upon which the idea of determinism is raised is now in comparative disrepute. It is no longer necessary, in order to be a good scientist, to believe in absolute interdependence of the parts in a great machine. It is no longer scientific to believe that things move only because of outward impulse. Freedom, so long denied in man because it apparently contradicted the laws of nature, is now found to be characteristic of nature itself. The phenomenon of radioactivity and the motion of electrons and protons, according to the quantum theory, are describable only in terms of laws which are statistical averages. No prediction can be made with respect to the activity of any individual physical particle. As Bertrand Russell has put it, "one might, more or less fancifully, attribute to the atom a kind of limited free will."[7] The downfall of the older physics with its emphasis on the conservation of energy theory and its denial of real change does not prove human freedom by any means, but it does allow the believer in such freedom a metaphysical substantiation for his contentions. At any rate, the arguments of human freedom can be entertained without any worry on the part of the free-willist that his presentations are contrary to the principles of the natural cosmos.

2. **Constructive arguments for indeterminism.**—Let us now pass to a consideration of the grounds upon which one can build a belief in the validity of self-determination.

In the first place, there is the feeling of freedom which has to be taken into account. The determinist has this feeling that he is free just as much as the indeterminist. Call yourself a machine, if you will; say that you are here because you are here; deny all responsibility for your acts; the fact remains that you do have decided and acute feelings of remorse. You may believe that you are just an automaton, controlled by heredity and environment, but you cannot gainsay the sense of responsibility, the feeling of obligation, which enters your consciousness at times with the driving power of a veritable thrust from God. The determinist will explain this feeling of remorse as due to training. We feel we are free because we are taught to be free. We have a sense of obligation because we hear we ought to have a sense of obligation. If people were to be brought up in an educational environment in which human deeds were explained as results of inevitable mechanical determinants, ideas of responsibility and remorse would vanish from our consciousness and from our vocabularies.

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[7] "Philosophy," p. 300. (W. W. Norton and Co., Inc., 1927.)

To this contention of the determinist we would reply in two ways. In the first place, we fear the consequences ethically, if everybody should suddenly believe that we are not responsible individually for our behavior. We admit that the external sanction of fear of law, physical pain, and public disapproval would make man susceptible to the decencies of human fellowship. But we doubt if in a system in which there were no sense of individual responsibility there would be any incentive to heroic endeavor, rigorous altruism, or sublime self-sacrifice. The moral life in a mechanistic system would be one of expediency, enlightened self-interest. The second reason why we believe the freedom of responsibility is significant is based upon the lesson of evolution. The story of evolution, if it means anything, means that phenomena which are not useful, which make no difference, fall by the wayside, as for instance, the vestigial organs like the appendix and the muscles of the ear. If the consciousness of responsibility and feeling of remorse have no function, if they are non-influential states of minds, delusions, then they should have disappeared with the ongoing of life. The very fact that these experiences are just as vital in civilized man as they are in primitive man seems to indicate that they refer to something that really exists in our nature and that responsibility and remorse are not merely the result of false education, but they are experiences truly indicative of the fact that the self may or may not do its duty. The self, in other words, has the right and the responsibility of free choice.

A second argument for indeterminism is an ingenious argument presented by E. G. Spaulding. Our first argument for freedom was that we feel ourselves to be free. The second is that the determinist must believe us to be free or he would not seek to change us from indeterminists to determinists. According to Spaulding, a man who tries to convince me by reasoning that I am not free is arguing with the odds against his standpoint. "For he therewith presupposes either that he himself is a real rational agent in the sense of changing the course of events from what the past would otherwise make it, or that I can go counter to my past and be convinced, or both. Four possibilities in all. Either we are both agents in this sense, or neither is an agent, or he is an agent and I am not, or I am and he is not. It is a case of three to one against determinism —by the laws of chance."[8]

In the third place, when human freedom is understood in its true sense, it accounts for intellectual and social phenomena explainable by no other theory. Persons endorse determinism because they think that freedom means action independent of one's character and external conditions. Real freedom, however, has never meant inconsistency with the dominant motives of one's nature. Freedom of the will is an instructive notion only when we realize that *will* is not some capricious power, unrelated to one's natural appetites, impulses, desires, emotions, and thoughts. Will is rather the entire complex of our biological and intellectual activities. Will is the unified self in action. We are free when this action, instead of being regarded as detached from environmental and hereditary influences, is regarded as being the expression of an agent in whom, by deliberation and evaluation, all the conditioning forces of experience are organized about one impelling goal. J. A. Leighton affirms this point—that freedom means, not the negation, but the realization of our actual selfhood—in the following poignant passage: ''The thought of an action which we thus choose to attend to, which we dwell upon, which we recall our minds to and come back to from wanderings in other directions, is so chosen because it is in the line of duty, in the line of our deepest and strongest affections, of our inner peace, harmony, and self-respect and promises further peace, self-respect, satisfaction in short, to our better natures.''[9]

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[8] "What Am I?" p. 46. See Ch. II. (Charles Scribner's Sons, 1928.)

When freedom is understood in this light, when it is recognized as the organization of one's experiences on the basis of a principle, set up after reflection about the actual affairs in physical and social life, then many of the events and attainments of man are best explainable, as was stated above, on the indeterministic theory. The history of civilization becomes a long testimony to the reality of the freedom of the human spirit. When freedom is identified, as it should be, with reason, then all the changes which man has made in the realms of physical and human nature are evidences of his reflective self-determination. The laws of science, the dogmas of religion, the poems of literature, the frescoes of art, the inventions of technology, the oratorios of music, the institutions of society, and hundreds of other products of creative intelligence, all cry out against the inability of a purely deterministic doctrine to account for the proficiency of human personality. Mind is not only a function of, but a function for, matter. We are creatures of environment, but we are creators of environment as well. To deny the power of self-determination in man and to explain all the achievements of human intellect on the basis of mechanical causation and selection is to manifest a will to believe many times more assuming and arrogant than is the belief of the champion of free will.

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[9] ''The Individual and the Social Order,'' p. 289. (D. Appleton and Co., 1926.)

A fourth argument for freedom is one which points out the consequences to social theory and practice if determinism were the generally accepted theory. If determinism is the true and final standpoint, then to set up moral norms would be foolish and futile. Such terms as duty, responsibility, guilt, merit, praise, blame, right, wrong, good, and bad would have to be given an entirely new connotation or eradicated from our vocabulary altogether. Take away these ethical notions from our minds and hearts, and morality loses its adventuresomeness and zest. Heroism becomes an empty word. Shame and remorse would no longer deter men from spoiling their better selves. These great concepts are too firmly rooted, however, in the thought life of the race to be treated merely as superstitions of prereflective eras. What Morton Prince has written concerning behaviorism may also be asserted with respect to determinism: ''Any psychology that does not recognize that consciousness is a cause of our actions, will be treated as nonsense and will never be accepted or seriously considered by common-sense people.''[10]

The sixth argument for freedom is an introspective argument. The argument is not merely the sense of freedom we have when in a psychological situation we choose one of two alternatives. Our present proof of free personality is the feeling of worth and significance which one experiences when he realizes the enjoyments of the life of the spirit. The conviction of free individuality can never be attained by any .scientific or practical dwelling upon the outward circumstances of living. Stressing the fact that we are consequences of a long series of biological causes, or attending too enthusiastically to the physiological conditions and concomitants of mental activity, or pondering over the infinitesimal character of man in a mammoth starry system, or engrossing ourselves in the exacting entanglements of contemporary economic organization, are not exercises, which, however fruitful they may be from some perspectives, can ever give us the appreciation that we are independent and creative centers of meaning and value. It is in moments of isolation, when in religious awareness God attends to the individual soul, or in the attainment of a new insight into the purpose of nature, and particularly of our place in this wider aim, that we attain unto a conviction of our inherent worth. It is the prophet, the inventor, the composer, the poet, the philosopher and all who create through the efforts and instrumentalities of their own spirit who to themselves and to the less gifted onlooker demonstrate the intrinsic character of human personality.[11] If a person has never been free, no argument will avail. If a person has been free and has realized the exhilarating delight of being a free spirit, no theoretical argument will ever destroy his confident faith in the self-proficiency of personality. True freedom is not an entity to be explained by logic; it is an experience to be enjoyed by living.

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[10] ''Psychologies of 1925,'' p. 203. (Clark University, 1926.)

The seventh and final suggestion in favor of the power of self-determination in man is the fact that it is supported by our noblest conceptions of society and of God. Service to the community and devotion to God would seem, at first, to be antagonistic to the realization of finite wills and wishes. But the case is just the opposite. Freedom does not come with the expression of egoistic impulses and selfish desires. A life lived for the satisfaction of private interests, even when the interests are of intellectual rank, will eventually bring the self into bondage. As J. A. Leighton has declared, the moral self grows "by weighing his interests in the light of the social whole and the super-social spiritual order."[12] Freedom is the outcome of rational insight, and rational insight means an appreciation of the motives of the cosmic mind. No philosophy has been presented which has depicted the universal purpose in more sublime perspective than the historic theory which has affirmed the world to be the creation of a loving, sacrificing Father-God. An individual whose delight is the altruistic realization of universal good will live a life which, both to himself and to society at large, will be convincing testimony of the value and validity of freedom.

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[11] See Spaulding, "What Am I?" p. 43 f.

[12] "The Individual and the Social Order," p. 289.

III. The Problem of Personal Immortality

The problem of immortality is perennially interesting and persistently baffling. Man is interested in it not merely because he wants to live after death but because he seems to have an instinctive feeling that, if we were not to live after death, this life would not be the same. When one hears a person say that he does not care whether he lives forever or not, one is tempted to wonder whether or not this person cares whether or not he continues in the present existence or not. The belief in immortality does evidence a confidence in and esteem for the life that now is. Selfish as it may appear, an individual who believes in immortality does reveal the conviction that his conscious experience is valuable enough to himself, and, perhaps, to others, to be indefinitely prolonged. The belief in immortality has always been an essential notion of religious theory, and religion has ever been concerned to champion the eternal worth of human selfhood. Not all thinkers, however, have had the same conceptions of the way in which the value of personality is to be everlastingly conserved. Let us notice the main theories concerning the different forms of immortality.

A. The Kinds of Immortality

Immortality may be of two types: *impersonal* and *personal.* Both regard immortality as a condition for the perpetual continuance of values attained by human selves. The former holds that the values produced by man may be conserved without necessitating the belief in the eternal existence of separate, individual centers of consciousness. The latter notion of immortality implies that no conception of personality is satisfactory which denies the possibility of belief in the continued existence of distinct souls. If immortality does not involve the possibility of self-consciousness, private hopes, individual memories, personal responsibilities, then it is immortality only in name. Impersonal immortality may be rational; it may be intelligible to the understanding, but it is destructive of all the aspirations which have made the everlasting life a state to work and worship for. Before going on to the case for personal immortality, let us note the kinds of immortality which deny the continued existence of separate conscious selves.

There are four sorts of impersonal immortality:

1. **Physical immortality.**—This is the immortality of which we are all sure by virtue of the indestructibility of matter and energy. The peculiar physical and chemical organization which constitutes us as unique individuals may be broken up, but the electrons and protons which now make up our distinctive selfhood can never be lost from the cosmic system of mass particles.

2. **Biological immortality.**—This is more satisfying to the religious interests of man than is the first type of immortality. Biological immortality means the continuance of an individual's mental and physical traits in his children and more remote descendants. This sort of continuance of the self is very gratifying to those with offspring, but it offers no satisfaction to persons to whom the opportunities and obligations of bringing up a family never become real experiences.

3. **Sociological immortality.**—This is sometimes called the immortality of influence. It refers to the fact that all of us, after physical death, continue to live in the memories of our friends. To some the privilege of influencing and of being remembered by humankind is a prerogative that goes on down through the centuries. For those who register

their personalities in glorious works of music, art, or literature, the span of continued existence will be as long as the history of the race.

4. **Metaphysical immortality.**—This is the immortality of those who hold that we find our eternity by merging our finite individualities into the universal selfhood of God. The destiny of man is to become a part of the World Soul. Plotinus, Spinoza, and Emerson have espoused this sort of immortality. Losing one's self in the cosmical spirit need not, however, imply the denial of the immortality of separate, finite personalities. Just as in the world of the here and now we develop and enhance our personalities through active participation in social, cultural, and spiritual communities, so, in the world to come, we may unite ourselves with God to the effect that our own private individualities are sustained and fulfilled. This is the doctrine of immortality propounded by Josiah Royce. It is, as W. K. Wright points out, a combination of the personal and impersonal views of immortality.[13]

Acknowledging the superiority of impersonal immortality from the standpoint of scientific verifiability, but insisting upon the superiority of personal immortality from the standpoint of religious aspiration, let us examine the validity of the latter conception.

B. THE VALIDITY OF THE BELIEF IN PERSONAL IMMORTALITY

We admit at the outset that with the exception of continued existence of the physical, biological, or sociological sort indicated above, immortality is a postulate of faith. By the very nature of things if we had material proof of conscious life in the next world, the proof would have to be in categories of our present naturalistic science. The immortality thus substantiated would lack the spiritual, metaphysical character ever demanded by the religious sentiment. We can, however, take up the criticisms against the actuality of personal immortality, and, if we are not able to test the condition in terms of the rules of scientific validity, we may be able to show that nothing in science or in any other discipline of knowledge fundamentally contradicts our right to believe in the eternal life of individual selves. In other words, we shall support the belief in personal immortality by criticizing the chief arguments levied against it.

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[13] See "A Student's Philosophy of Religion," p. 434. (The Macmillan Co., 1922.)

1. **Origin of the idea is not in the primitive soul theory.**—Many regard belief in immortality as a development of primitive man's notion of the soul. The conception of immortality is considered to be a survival of early superstition. The holders of this theory explain the ancient idea of a self which can leave the body and continue to live after bodily death on the basis of dreams, memory images, and reflected images. Primitive man derives the notion of his ''other self,'' or soul, by seeing the reflection of himself in a pool of still water or in the pupil of another's eye in close combat, or by remembering himself in some past situation, or by dreaming that he is away on the hunt when upon awaking he realizes that he has not been out of his hut. To us, this notion of the genesis of the soul-idea is not an account of a religious belief like immortality. It is rather an explanation of the origin of psychological science. It is primitive man's theory of memory images, and so on, rather than a metaphysical interest in some valuable spiritual world. The best type of immortality does not hold that we have other selves which go on living after the death of our present main self. Personal immortality has always insisted that our present selfhood, and not a replica of it, must be continued. Belief in immortality, furthermore, implies a consciousness of the worth and dignity of human personality which primitive man hardly possesses. Finally, if we are to discount belief in immortality because primitive man had the idea, then we must discard science, music, art, industry, politics, and most human achievements. For few indeed are the civilized pur-

suits of to-day which were not anticipated and commenced in the thought and action of barbaric man.

2. The interrelation between mind and body does not preclude it.—The chief hindrance to a belief in personal immortality is, perhaps, the close relationship between the mind and the body. If consciousness is dependent upon the functioning of physiological processes, what becomes of consciousness when the body has returned to dust? The reputation of the argument of ''no psychosis without neurosis'' would take us again into a discussion of materialism. We may, however, indicate briefly here some notions which recognize the importance of biological factors and at the same time suggest the possibility of the ultimate independence of consciousness from the nervous system. There is the idea of William James,[14] who suggested that the brain may be a transmitter and not a producer of consciousness. Again, we have the theory of Henri Bergson, who thinks that the brain is an instrument of consciousness. True being is in the dynamic flow of mind. Material processes are but tools for the control and communication of the living force. The personal idealists also make mind supreme. The true self is the free consciousness. Biological processes are logical constructions, demanded in order to account for certain features of selfhood. Finally, there is the notion of emergence, which regards mind as the outcome of the bodily activities. According to this theory there is no consciousness without a biological apparatus, but the realm of consciousness is a new type of being with laws of its own and not reducible to categories of bodily activity.

3. The belief in personal immortality is not selfish.—Then there are those who hesitate to believe in immortality, because they feel that to do so betrays a selfish motive. It is highly arrogant, they believe, to hold that you are worth continuing forever. This ethical argument against immortality is largely the outcome of a conception of the next world no longer widely held. It is a vestige of the former conception of Heaven as a place of eternal rewards and blessings for the righteous and of Hell as an everlasting torment for the wicked. The hope of residence in the former and the fear of habitation in the latter place became dominant motives for ethical conduct in the behavior of many persons. Such a view of morality, which made it assurance of Heaven and insurance against Hell, must be acknowledged of questionable moral standing. The next world, however, is now considered not as a place where moral responsibilities will be lacking but as a domain in which self-denying and community-producing activities will increasingly and incessantly occur. Those who say that it is selfish to want to live forever are not extremely logical in their point of view. It is no less selfish to want to live to-morrow, or even to want to live to-day. The only desires which are wrongly selfish are those the attainment of which would prevent others from realizing their own best selves. To hope for immortality is not to hope for an objective the attainment of which will thwart the ideals of others. If it is selfish to long for the continuation of consciousness in order to prolong a life of cultural and communal activity, then it is wrong to enjoy music, art, literature, and friendship. To follow the logic of those who denounce the selfishness of belief in immortality would be to forego the most personally satisfying and the most socially helpful interests of man.

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[14] See his Ingersoll Lecture on ''Immortality.''

And as to the argument that the belief in immortality is selfish because it affords to the believers an escape from the drab and dread world of facts, we suggest that this is a libel against those who hold to immortality. In the first place, believers in immortality are not usually the ones who find the present existence a realm of chaos, chance, and conflict. The sentiment for immortality is most thoroughly developed in those who through religious insight have come to regard reality as orderly and good. Immortality means the continuance of value; not escape from evil. However otherworldly the medieval point of view may have been, it is far from the facts to assert that believers in immortality to-day consider the present existence to be mean and vile. In the second place, believers in immortality are not grievously afraid of actual facts. Too many believers in immortality are altruistically working in filthy slums or sacrificially civilizing savages in dark jungles to justify the statement that belief in immortality is the mark of a timid, tender-minded soul.

4. The test of the belief is acknowledged to be non-scientific.—The believer in immortality, like any true seeker after knowledge, is interested in all experimentation or research which attempts to find evidence for the continued existence of the soul. He recognizes the fact that many persons of high intellectual standing are investigating the problem in the Society for Psychical Research. As a student he is also interested in questionnaires regarding the prevalence and character of the belief in immortality. In the last analysis, however, his confidence in immortality is based upon considerations independent of the conclusions of scientific investigators. The scientific findings have been, in his judgment, unreliable and disappointing. The validity of the belief, therefore, must rest upon appeals to sentiments outside of man's purely intellectual concern.

The believer in immortality finds his arguments for his conception by referring to the character of the universe as a whole. Belief in immortality is not the result of a detailed problem; it is not a conclusion arrived at by meeting any specific situation; it is the corollary of the wide view of things, characteristic of theoretical and speculative metaphysical inquiry. The exponent of immortality believes that the universe is such that selves only can be eternal. He represents frankly a religious and idealistic bias. To one without this bias immortality will ever be mysterious and untenable. To the believer in God, to one convinced of the uniqueness and worth of personality, to one assured of the moral integrity of the world, the belief in immortality is natural and necessary. It provides the opportunity for substantiating justice as a category of reality. Given an immortal life, the individual can have the chance and condition for consummating the great objectives which in this world seem to be hopelessly thwarted. Given immortality, many of the evils of this life appear to be no longer permanent handicaps to the human spirit, but stimulators of self-realization and obstacles which are blessings in disguise. There is undeniably something about human experience that is sensitive to the notion that the human self can never be destroyed. We may believe that our future existence will be completely submerged in that of the cosmic spirit, or we may believe that immortality means merely our continued existence in the memories of others, but we can never gainsay the fact that the very belief in some sort of everlasting continuance gives life zest and grounding.

The critic of immortality is correct in asserting that there are other sanctions and imperatives for the good life besides the belief that our actions are of eternal consequence to our personalities. But he is thinking of ordinary ethical practice. We provide for our families, pay our taxes, mow our lawns, give to charity, and do many other commendable actions on the basis of general prudence and expediency, but not often do those who deny immortality become heroes of morality to the extent that they will die at a stake or on a cross for a cause. Men do not lay down their lives for their friends unless they believe, with Longfellow, that life is real and earnest and that the grave is not the goal. The belief in immortality is a venture in the field of romantic faith, but it is the best sort of a venture to make one adventure in the field of realistic fact.

We have come to the end of a somewhat lengthy discussion of human personality. We have attempted to show that the self is not merely a biological machine, but a self-conscious center of appreciation and creativity. We have tried to give the impression that the self is not simply a fact in a world of facts, but also a value in a world of values. Our next problem is to investigate the nature of these values, to which our attention has previously been repeatedly called.

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CHAPTER XVII

THE FUNDAMENTAL ISSUES IN THE THEORY OF VALUE

THE problem of values arises because man views some objects in the world not only as existent, but also as worthy of existence. An object is said to possess value when we add to the ordinary qualities known in cognition other qualities apprehended in appreciation. Without discussing now whether the psychological process of appreciating is a condition or a consequence of the value properties, we can definitely assert that entities of value in the world must be either possible or actual objects of personal preference and approval. It is conceivable that a thing may be of value without stimulating in persons a consciousness of approval, but one thing is certain and that is, that no object could be considered of value which persistently provoked in persons a consciousness of disapproval. The value character of things may be independent of human experience, but it cannot be denied that in man's experiences of enjoyment and esteem the value aspect is discriminated and defined. The beauty of a ruby may be just as objective as its weight, but the awareness of its beauty involves a different psychological response than does awareness of its weight. Valuing is a procedure that requires the functioning of feelings and emotions. In the process of valuation, we do more than apprehend objects as they are, apart from our knowing; in valuation we regard objects as they enter into the meanings and practices of our lives.

Valuation is not a contradiction of cognition; it is the fulfillment of cognitive knowledge. Theories of value have arisen to overcome the partiality of the older theories of knowledge. Axiology, the name which we have already mentioned to be the technical term for theory of value, and epistemology are not conflicting disciplines. Axiology is the development out of a specialized epistemology, which has been more concerned with science than with sentiment and more interested in knowledge as logic than in knowledge as life. As W. M. Urban has asserted, valuation is cognitional and cognition is valuational.[1] In other words, to recognize the beauty and goodness of reality is not to interpret the world in terms irrelevant to truth; it is to interpret the world in terms of the highest and most complete conception of truth.

This notion, that to know the value of a thing is to know the total implication of its fact aspect, is not, however, the only axiological theory presented to-day. There are rival theories with respect to many different phases of the problem of value. To indicate some of these problems, together with some of the proposed solutions, is the purpose of the present chapter. We shall approach these problems by attending to two major questions in axiology; namely, the locus of values, and the classification of values. In the following chapter three more axiological issues will receive consideration: the esthetic enjoyment of values, the ethical employment of values, and the religious reason for values. Let us now turn to the two problems for our present discussion.

I. The Locus of Values

The problem of the locus of values is in axiology what the problem of the relevancy of knowledge is in epistemology. The question of locus in axiology involves the relationship of value to the valuing mind. Just as in epistemology we were concerned with ascertaining whether the object of knowledge is within mind or outside of mind, so in axiology we must face the problem of the objectivity or subjectivity of the object of valuation.

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[1] See "Proceedings of the Sixth International Congress of Philosophy," p. 289. Ed. by E. S. Brightman. (Longmans, Green and Co., 1927.)

There are three theories concerning the locus of values. They hold respectively that there are *objective* values, *subjective* values, and *objective-subjective* values. Roughly speaking, we might call the three standpoints the realistic, pragmatic, and idealistic doctrines of value. We shall examine each of the positions.

A. The Doctrine That Values Are Objective

The thinker who believes in the objectivity of values—as for example, truth, goodness, and beauty—does not deny that these entities are desirable in the sense that man desires them. What the believer in the objectivity of values insists upon is that the desiring of them does not constitute their value. That values are desired is a true situation, but values are values on grounds independent of the condition that human beings find satisfaction in them. To put the matter another way, values have ontological reality apart from any psychological status which they may attain.

When we speak here of values as being objective rather than subjective, we do not mean that they are not mental. The term *subjective,* in the present connection is meant to refer to the self as a valuing agent. The agent, for our immediate purpose, may be regarded either as a mechanical organism with biological interests or as a teleological soul with purposes. Furthermore, values may be objective without being existential. A beautiful sunset is an objective value; it exists in reality apart from the psychological process of valuing. But an ideal may also be considered objective. The ideal of human brotherhood is a *good;* it is a value; its objectivity, however, may be, as we shall see below, in the realm of subsistence, rather than in the realm of existence. Even to those who regard ideals as mental, they may, in the present connection, be considered as axiologically objective. However epistemologically subjective they may be, axiologically they are objective, because their value may be found in conditions other than that of a relationship to a desiring or appreciating self. Ideals, as well as things, in so far as they are valuable, are valuable to the objectivist, not by virtue of their being prized, but by virtue of some properties they contain in themselves. Now wherein do those who consider values as independent of human interest, liking, and desire find the element of value to lie?

There are three types of value situations in which an objective axiology may seem to be most adequate. They are: value as a tertiary quality, value as a subsistent, and value as an impersonal utility. Let us notice these four value forms in turn.

1. **Values as tertiary qualities.**—According to this conception, values are regarded as tertiary qualities of objects. As the primary and secondary qualities, discussed previously, may be considered as part and parcel of objects and as independent of psychological processes for their being, so tertiary qualities, as beauty, simplicity, glory, delicacy, and order, may be regarded as essential features of objects. John Laird states the position very clearly as follows: "There is beauty, I take it, in sky and cloud and sea, in lilies and in sunsets, in the glow of bracken in autumn and in the enticing greenness of a leafy spring. Nature, indeed is infinitely beautiful, and she seems to wear her beauty as she wears color or sound. Why, then, should her beauty belong to us rather than to her?"[2]

A person who takes this position would also call cases of disvalue, as ugliness, tertiary qualities. There would be as many experiences of value as there are sense perceptions among people. A chaos of opinions concerning values would occur just as there is conflict of opinions concerning primary and secondary qualities. A more frightful skepticism would result in the case of values, however, because we do not have, at least as yet, any criteria to tell which experiences of values, as tertiary qualities, would be the most authoritative. Unless we bring in some test of values, as personal satisfaction or coherence with other values, values become as numerous and as contradictory as the feeling tones which they provoke in our experience. When we do bring about unity by the employment of some standard then, of course, value becomes more significant than merely the quality of an object. It becomes the character of a type of consciousness or it becomes a system of values.

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[2] "A Study in Realism" (1920), p. 129. (By permission of The Macmillan Co., publishers.)

Those who insist that value is an empirical quality of objects assert that all attempts to find out the meaning of value by examining the relations of values to each other or to selves are sophisticated departures from the naïve truth about values. Values are, they say, as ultimate, as simple, as real, and as indefinable as other qualities. G. E. Moore is a thinker who has been especially emphatic concerning the indefinable character of values. For instance, according to Moore, good is as ultimate and as indefinable as the quality yellow.[3]

2. **Values as subsistents.**—According to this notion values are impersonal. For their being they are independent of human desire and preference. They are not, however, as subsistents, regarded as qualities of objects. They are conceived as objects themselves. They are self-existent entities in the world and have individual being no less than mountains, chairs, desires, or memories. They do not have, however, the spatial and temporal characteristics possessed by physical things. They do not have the temporal nature of things in mind. They belong to a realm void of spatial and temporal connotation. They do not exist; they subsist. Their dwelling place is not in the realms of the physical and mental, but in the domain of

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[3] See "*Principia Ethica,*" Secs. 5–22 (The Macmillan Co., 1903); and "Ethics," Ch. VII (Henry Holt and Co., 1912).

the logical. We have already examined this logical world in our discussion of recent realistic ontology.

The realist does not deny that some values are existential, nor does he deny that we may contemplate subsistential values in emotional fashion. He is only pointing out that certain values are not constituted or modified by the interrelationships between persons and things in the levels of time and space. E. G. Spaulding describes the nature of subsistential values as follows: "Justice, truth, goodness, and beauty are 'eternal verities'—entities not subject to the stresses and strains that distort the particular and concrete time—and perhaps also space—conditioned products of *natural* processes. Indeed, did the act or the person become *wholly just,* and were there only genuine knowledge and no error, still would *these* 'concretes' and 'particulars' be *numerically distinct* from *perfect justice* and from *complete truth.*"[4] This theory is, of course, a modern expression of the fundamental principle of Plato's doctrine of ideas. The chief values in reality, according to Plato, are the universals, or ideals, which, however much they may participate in crude, stubborn matter, have an immutable, perpetual character which makes them transcendent to and independent of the realm of changing, existential particulars.

This conception of values is also found in the historic tradition of Catholic philosophy. The exponents of neo-scholastic or neo-Thomistic philosophy hold that truth, goodness, and beauty are ontological reals. Our ordinary psychological apprehensions give us knowledge of these values which is contradictory and partial. True knowledge, based upon the right use of reason, shows us the eternally real values. Cardinal Mercier may be taken as a prominent exponent of recent scholastic thought. Catholic theory is different from Platonic theory, in that the latter notion presents values as self-existent reals, whereas the former doctrine does not consider values to be self-sustaining. God, in Plato's theory, is the highest ideal in a system of ideals; God, in Catholic philosophy, is the ground and source of values. The contemporary Catholic agrees with medieval scholasticism in holding that, although the ontological status of values is prior to their psychological status, the theological ground of values is the most fundamental basis of all.

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[4] "The New Rationalism," pp. 498, 499. (Henry Holt and Co., 1918.)

We would say, in concluding our discussion of this type of axiological objectivity, that Platonic realism and medieval realism do not consider values to be as simple and qualityless as they are sometimes depicted to be in recent realism. For all three realisms, values are independent of psychological processes of valuation. In the Platonic and Catholic tradition, however, values are regarded as dynamic, teleological forces, vibrant with meaning. They are not merely useful as objects of esthetic contemplation; they are immanent principles of purpose and power in the processes of mundane reality. To some of the recent realists, especially to Bertrand Russell, it is useless to believe that values which find their being in the subsistential realm beyond time and space can have any influence in our alien and chaotic life. E. G. Spaulding, S. Alexander, and R. B. Perry are outstanding realists who, in opposition to Russell's otherworldly conception of values, assert that values are causative forces in nature. Another difference between recent realism and the older realisms is that the new realistic doctrine is more interested in giving ontological status to injustice, ugliness, and other disvalues, than are the former theories. The older realisms, therefore, are not so closely related to pessimistic thought as are certain strains of contemporary realism.

3. **Values as impersonal utilities.**—In the previous cases of objective value, the value factor lay in the value quality as value itself, either as a tertiary quality or as a subsistent value resides in the quality or subsistent itself independently of any connections it may have to other things

in reality. In the immediate case the value of a thing is to be found in its function for or relatedness with other things. One relationship we are not considering here, however, and that is the relationship between a valued object and a valuing self. This relationship is treated in the next section on subjective values. Value may be instrumental without being of esthetic or practical use to human beings. It may play a useful part in a system of objects all of which are, for their being, independent of knowing or desiring minds. We are now discussing what John Laird calls the *elective view* of values. The elective view, asserts Laird, involves two conditions of value. Everything is valuable to itself, or it is a help or hindrance to something else.[5]

Taking it for granted that everything possesses one value—namely, that it is valuable for its own existence, that it is of worth as the condition of its own self-maintenance—we may point out two kinds of values which are impersonal, but at the same time instrumental. The two values which are non-humanistic utilities are value as a *characteristic of organization,* and value as a *condition of growth.* Neither organization nor growth here refers to the life or experience of conscious selves. It goes without saying that disvalues, in this doctrine, would be factors making for disorganization or retrogression. Let us notice how these two types of values function.

a. Value as a characteristic of order.—A cell in a biological organism is not chiefly valuable because it is an object to incite esthetic appreciation, nor because it is of interest to any conscious being. One may find esthetic pleasure in the microscopic study of cells, and one does, of course, have a vital interest in the welfare of his cell structures, but the value of a cell primarily resides in the fact that it is a necessary part of a whole system of cells whose organization is a prerequisite to the life of the organism. One cell is good for other cells; without its functioning the life of the other cells would be menaced. Rainfall is a value for vegetation apart from any consideration of the worth of rainfall and vegetation to man. The sediment from the river was valuable for delta building long before human beings appeared in the evolutionary process to interpret values as determined by the approvals and interests of man. In short, we may speak of a value as a factor which makes a difference to another thing in the sense that the existence of this other thing is sustained. A disvalue would be a situation which makes a difference to things in the sense that the existence of these things is thereby prevented. Needless to say, this doctrine does not enter into a discussion of the question as to whether or not the things concerned are worthy of existence. When the system of entities sustained is thought worthy of existence, then value as impersonal utility becomes value as personal utility. We cannot think of things as worthy or unworthy of existence without interpreting them in the light of that which seems to be of worth or of no worth to conscious, personal beings.

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[5] See ''The Idea of Value,'' p. 304. (The Macmillan Co., 1929.)

b. Value as a condition of growth.—This is a value very similar to the type discussed just above. In value as impersonal utility, however, the valuable entity is valuable for a thing other than itself. Here the valuable entity is valuable for the thing in which it resides. It is not valuable in that it sustains the thing of which it is a part. We do not mean here value as a condition of self-maintenance. We mean here rather value as a force tending to make a thing change from itself into something different and novel. Value, in this connection, is the principle of progress. Disvalue would be the principle impeding or negating progress. By progress is meant change from simplicity to complexity of structure and activity. That this change from simplicity to complexity is a worthy transformation is a personalistic consideration, with which we are not now concerned. Emergent evolution would be impossible without principles of dynamicity, synthesis, propulsion, and impetus in reality. These principles are values in the sense that they are the entities without which the creative type of evolution would be impossible.

The subjectivist in axiology will admit what we have said concerning values as impersonal utilities, but he would not call the utilities values. He would assert that the relationships between things, which are considered apart from their bearing upon human experience, are facts to describe impersonally and not values which should be interpreted in terms of personal interest and preference. What now are the features of being which the subjectivist finds to be cases of value?

B. The Conception of Values as Subjective

There are three situations which may be considered as instances of subjective value. We may denote them as *interest in consciousness, interest of consciousness,* and *interest for consciousness.* Let us notice the meaning of these types of value. It will be observed that they are not mutually exclusive, but that they supplement each other.

1. **Value as interest in consciousness.**—By this notion we mean that just to have in consciousness an interesting experience is valuable. An agreeable sensation is a value. A disagreeable sensation is a disvalue. The more varied and extensive our conscious contents are, the more value there is to our experience. Eating, drinking, skating, reading, playing are valuable, among other reasons, just for the pleasure which comes to us from their execution. Art, literature, music, religion, and friendship have many significances, but they are values largely because they furnish us with internal experiences which because of their interestingness bring personal satisfaction. The worth of an individual may be judged on the basis of the data of experience which he deems most interesting to himself. Superior is the individual who finds more meaning, more interest, and more satisfaction in opera than in jazz, in

Shakespeare than in a movie play, in Raphael than in the daily newspaper comic, in reflective political or religious conclusions than in the opinions of the crowd.

2. **Value as interest of consciousness.**—This is the pragmatic conception of value. Values are regarded as the objectives or aims of intelligence. The ideas which are instrumental in bringing out the solutions of the problems with which the individual is faced are valuable ideas. The norms and hypotheses set up after reflection are valuable to the extent that they bring about the satisfactory consciousness discussed in the paragraph above. The ideas which we have become good and true in our interaction with environmental affairs. If they lead us to more abundant biological life and richer conscious content—in short, if they are in the interest of better experience—they are values. If they are against the interest of our experiences, then they are disvalues. Industry is a value, not only because the industrious man has a sense of individual worth and contentment, but also because it is a condition which brings about a change in the environment which makes other desirable conscious states possible, both for the industrious individual and for society as a whole.

3. **Value as interest for consciousness.**—In the two situations of subjective value, already discussed, value is a characteristic of consciousness. In the present type of subjective value, the value attribute is in the object of which we are consciously aware. In the experienc*ed,* and not in the experienc*ing,* the value element lies. We are talking about subjective value, however, because apart from an experience the object has no value. The object is valuable, not in itself, but in the fact that it arouses the interest or desire of a conscious self. It is desirable because it is desired; it is of worth because it is of worth to someone; it is good because it is good to a self.

R. B. Perry is the chief exponent of this notion of value. He formulates the thesis this way: "*X* is valuable=interest is taken in *X*." Perry presents the following conclusion from his notion that value is any object of any interest: "It follows that any variation of interest or of its object will determine a variety of value; that any derivative of interest or its object will determine value in a derived sense; and that any condition of interest or its object will determine a conditional value. In short, interest being constitutive of value in the basic sense, theory of value will take this as its point of departure and center of reference; and will classify and systematize values in terms of the different forms which interests and their objects may be found to assume."[6] According to Perry, Spinoza was fundamentally correct in asserting that "in no case do we strive for, wish for, long for, or desire anything because we deem it to be good, but on the other hand we deem a thing to be good because we strive for it, wish for it, long for it, or desire it."[7]

Those who hold that the value of an object is produced by the interest an individual takes in it, do not mean that the existence of the object is constituted by the human consciousness of it. Objects may have ontological status, either as physical, mental, or subsistential, independently of our knowledge of them. It is only when these ontologically independent objects become axiologically significant —that is, only when they take on characteristics of value— that the processes of desire and interest are involved.

It may be true that things attain value when we desire them, but the problem as to whether they are worthy of our desire still remains. Many persons do not desire what they should desire, and others have an interest in things to which their interest should not be directed. To say merely that value is determined by desire would lead to extreme relativism in intellectual and moral judgments. We would agree with John Laird in his argument that the *appreciative* view of value (his name for the interest theory) is inferior to the notion which he calls the *timologi-*

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[6] "General Theory of Value," p. 116. (Longmans, Green and Co., 1926.)
[7] "Ethics," Part III, Prop. IX.

cal view, that value fundamentally lies in the excellence of the object valued.[8] Excellence of objects is a quality to be discriminated and estimated on the basis of rational understanding and not on the grounds of emotional preference.

Both the purely objective and purely subjective theories of value are inadequate. The objectivist, in vouchsafing the independence and intrinsic worth of values, is prone to remove them from the sphere of human activity in which they might be of constructive influence. The subjectivist, in locating values in situations of human experience where they are of definite usefulness to man, meets difficulty in demonstrating their validity and authority. The conception that values are both objective and subjective attempts to remedy the defects in each of the other two theories. Let us examine this synthetic position.

C. The Doctrine That Values Are Objective and Subjective

Of course, there is no objectivist who denies values are subjective in the sense that individuals know and desire them. Again, there is no subjectivist who does not grant that values are objective—at least in the sense that, however psychological their locus may be, they make a difference in the realm of physical objects. The doctrine which we are now considering is the only theory, however, which asserts that both the ontological and psychological factors are necessary for the constitution of value. The objective-subjective theory holds that values are products of an interaction between material and mental phases of being. Values are the outcome of psychophysical situations. We can best bring out this conception by showing the relation of value to judgment.

1. **Value as a type of judgment.**—In our epistemological

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[8] See "The Idea of Value," Ch. IX. For an instructive treatment of the locus of value, see Mary E. Clarke, "A Study in the Logic of Value." (University of London Press, Ltd., 1929.)

discussions we affirmed that judgment is the situation in which the character of the objective world is revealed to an individual, finite center of consciousness. In judgment, reality comes to self-consciousness in particular, partial features of the whole. The range of the expression of the universal in the particular depends upon the intellectual powers of the world-disclosing, finite being. Some individuals' capacity of judgment is limited to the revealing of the facts of reality; others can realize in their minds the meanings of the great outside; others, still more gifted and more ambitious, have the ability to appreciate the external realm as a field of values. Valuation is thus a very proficient type of knowledge; it is knowledge which shows that things may be good and beautiful, as well as true. This higher capacity of interpretation which some possess is due to the fact that their consciousness is receptive, by virtue of its capacities for sentiment, to stimuli in the environment which the prosaic and matter-of-fact individual never even imagines to be present in the world.

Our view is that judgments of value are just as interpretative of the real, non-epistemological world as are judgments of fact. If values refer to ideals, norms, hopes, aspirations, then we would assert that reality, which permits and sustains these tertiary qualities in human consciousness, must itself be an ideal-realizing being. We are thus obliged to say that features of disvalue in our consciousness, as ugliness and disorder, also disclose cases of imperfection in the world at large. Our view does not rest in pessimism, however, because, as we declared in our discussion of religious values, the universe is fundamentally on the side of truth, goodness, and beauty. Our reasons for this assumption are developed in our arguments concerning God.

2. **The supreme locus of value.**—When we assert that values are as real as facts we are not stating the final conclusion of our view of judgment. The realm of being, even though it contain values as well as facts, is not the ultimate

reality. In ontology we do not find the truly real. Again, not in the experience of value, which occurs in our consciousness, is the final reality to be found. In epistemology we do not find the truly real. The real reality we believe to be in personality, the seat of judgment, the center in which the ontological, epistemological, and the axiological are unified into a dynamic, living, individual being. The real is not what we know and value; it is the "we" who know and value the knowable and the valuable. Selves are the ultimate reals and, therefore, the ultimate values. And by selves we mean centers of knowledge, valuation, and action which attain increasing worth and richness as they increasingly express and recreate the world of facts and values of which they are a part. We believe that there are qualities of excellence in the realms of impersonal being; we believe that there is value in an individual who is just potentially a participator in the sphere of these impersonal affairs. But we insist that the best type of reality conceivable to man is that in which the values of the external world come to be enjoyed and employed experiences in the life of an individual who has passed from potential to actual and fulfilled selfhood.

If we live in a universe which, in our intercourse with its many features, provides us with experiences of superlative worth, then we must believe that these features in the universe are the product and interest of a being who is personal too. As J. A. Leighton has put the argument, "if we have the right to say that man's esthetic, moral, and religious sentiments are genuine data for the interpretation of his place in the universe, it follows therefrom that, since the values inherent in these sentiments always have lodgment in selves or persons, the universe is personal or spiritual."[9] In the last analysis, therefore, we would present as the real of reals, the value of values, the truth of truths, God—the preëminent personality, the ground of an evolutionary process which has brought forth man, a center of reality, value, and truth, in which the divine itself is imaged.

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[9] "Man and the Cosmos," p. 409. (D. Appleton and Co.)

Our next problem is to show how the values which in the experiences of persons give us knowledge of the ideal character of reality may be described as being of different important types. Let us, therefore, pass to an indication of the nature of value by a presentation of the main sorts of values.

II. The Classification of Values

Three divisions are sufficient to suggest the chief kinds of values. There is the classification of values into *extrinsic* and *intrinsic; relative* and *absolute; practical* and *theoretical.* The division of values into subjective and objective has received ample discussion.

A. THE PROBLEM OF THE INTRINSIC CHARACTER OF VALUES

An intrinsic value is one represented by the experience of self, which is sufficient unto itself and requires no other experiences for the completion of its meaning or satisfactoriness. An extrinsic value is one represented by an experience which is not sufficient unto itself, but requires other experiences for the completion of its meaning and satisfactoriness. These definitions frankly accept the locus of value in the consciousness of persons. The existence or subsistence of impersonal values is not denied, but it must be recognized that values which do not enter somehow into human experience can never become the object of any significant philosophical interest. Now, are the things which we experience as valuable, of worth in and by themselves, or are they significant because they are related to other things of reputed value character?

We must say readily that most of the objects in which we recognize value character are possessed primarily, if not exclusively, of extrinsic worth. Their importance lies in the relationships which they bear to other features of reality. From one standpoint this means that most things in the world are dependent upon other things. From another standpoint, it means that most things are instrumental, as parts of a totality, in sustaining the whole. An extrinsic value is one, therefore, which gives to, as well as receives significance from, other values.

The objective idealist holds that there is only one entity of intrinsic value; namely, the Absolute. Absolute being is the only reality which is independent of other objects; the only being which is precluded from serving objects outside of itself. For the idealistic absolutist the whole is the only real value, as it is also the only real truth. This all-inclusive value, to the objective idealist, is a person, or at least a personal experience. In the absolute self the meanings and values of the universe are so completely expressed that all conflict between a valued object and a valuing consciousness is overcome. The subject and object of the value experience, like the subject and object of intellectual experience, in the Absolute are one. Everything less than the Absolute possesses extrinsic worth and only extrinsic worth. The particular and the finite is valuable by virtue of the revelation and interpretation it is able to give of the cosmic meaning and value. This view is, of course, the axiology of the radical singularist.

The pluralist has the view opposite to that of the singularist. The axiology of pluralism is very similar to the doctrine which we have already discussed under nominalism. To the pluralist, the finite individuals are the intrinsically valuable reals. The universal is a mere name, a construct of creative imagination, produced for purposes of esthetic contemplation or scientific explanation. The Absolute, therefore, is an extrinsic value—dependent for its being upon mental originality and invention, and instrumental in furthering man's religious, artistic, or intellectual life.

It seems to us that the singularist and the pluralist are both right and both wrong in their axiological doctrines. They are right in what they affirm, but wrong in what they deny. The singularist fails to realize that in our experiences of separate, finite objects we may have states of consciousness which are self-sufficient and completely satisfying. The artist can behold the beauty of a sunset without contemplating the world of beauty at large, and the thinker can find adequate meanings in a particular problem of science or religion without waiting to attain an understanding of reality as a whole. We can enjoy our friends without a mystical companionship with the cosmical community. The pluralist, on the other hand, fails to realize that experiences of totality and oneness are not abstract constructions but deliverances of direct and immediate awareness. The pluralist praises and practices analysis to the extent that he loses all appreciation for unity and universality. To the pluralist, discrete physical facts are the only intrinsically real things. The singularist calls the totality the only intrinsic value, because to him anything less than the whole cannot be real. We do seem to be instinctively averse to proclaiming anything of value to which we cannot ascribe the substantiality of reality. Our way out of the strife between intrinsic and extrinsic values is to ascertain the definition of the real.

The real, as we have repeatedly stated, is fundamentally the same as the personal. In selfhood, parts are organized into a unified individuality. Each part is an extrinsic value in the constitution of the whole, which is the intrinsic worth. Inasmuch as the whole participates in the parts, the parts, in turn, are intrinsically valuable. The whole, in turn, is an extrinsic value because it depends upon the parts and also is instrumental to the coherence and continuance of the parts. The debate regarding intrinsic and extrinsic values is, after all, largely a matter of perspective. If we interpret the universe as best depicted in the light of the nature of personality, everything may be regarded as either intrinsic or extrinsic. Is friendship an intrinsic or an extrinsic value? It depends upon whether you are thinking of it as a source of pleasure or as a force making for community welfare. Is God intrinsically or extrinsically valuable? It depends upon whether you are thinking of him as an indwelling, satisfying experience, or as an influence making for the betterment of man and nature. Is a chemical experiment of intrinsic or extrinsic worth? It depends upon whether you are a romantic scientist, to whom every chemical reaction is a thing of joy and beauty, or a matter-of-fact technologist, to whom science must always be of utilitarian import. It is discouraging from one standpoint that views of reality are so conflicting, but from another and more profound standpoint it is decidedly encouraging that we live in a world in which both practical realists and poetic romanticists can be at home.

B. The Question of the Relativity of Values

Are values relative or absolute? Is truth eternally the same, or does it change with variations of thought and time? Is beauty a matter of opinion, or are there some immutable standards which could and should be the criteria of esthetic judgment? Is morality a changing convention, or is it the expression in societal processes of universal laws of righteousness? These are questions which try men's souls.

We must admit at once that our views regarding truth, goodness, and beauty do change. The problem is as to whether or not human opinion in these fields is the final authority. Of course, no norm can be authoritative for us which does not enter into our experience, but can there enter into our experience ideas of truth, goodness, and beauty which represent not merely human insight, but the meaning and motive of reality itself? That is the question. Our notions in the realm of values are naturally human responses. Are the stimuli for these responses eternal patterns in the scheme of nature or in the mind of God?

In the interest to show that there are certain features of absoluteness in values we would submit the following considerations. In the first place, the changing of axiological standards has never deprived man of the feeling that there should be standards. The *what* of our norms may change, but *that* there should be norms has ever been a constant conviction. In the second place, one individual's values may be different from another individual's values, but no individual can afford to violate the values which he sets up for himself. A person may recognize the general plurality of moral, esthetic, and intellectual ideals and still believe that, for him, his own particular ideals are absolutely authoritative. To refuse to follow the dictates of our own standards because they happen to disagree with the norms of other people, would make social life intolerably chaotic. This imperative to live up to one's own light and love, however, makes the obligation to have rational norms of thought and conduct highly serious and significant. In the third place, deliverances concerning truth or morality sometimes possess a directness and distinctness which give us the right to believe that, inasmuch as they are apparently received without conscious effort, they must be revelations from a suprahuman mind or person. This is the mystic's argument for the authoritative character of ideals. They are by-products of the ecstatic experience, incident to communion with the universal One. In the fourth place, we may treat values as a type of knowledge. The arguments given in epistemology to show the correspondence between thought and existence may also be applied to show the correspondence between value and existence. The utility of values and the coherence of values are indicative that axiological judgments are interpretative of real states of affairs in objective reality. To the degree that value judgments are true, they depict the external universe; to the extent that they portray the world at large, they must be categorical imperatives for human character and conduct.

The institutionalizing of ideals and values into laws of governments and the creeds of religions is suggestive that they are not merely the egoistic desires of individual selves, but the principles of a being as stable and persistent as society. That the social community itself effects and sustains values allows the assumption that the physical and biological environments, in and on which the sociological phenomena have their being, are congenial to the final success of axiological entities. That nature is thus kind to values cannot but mean that our world is supported and motivated by a universal person. There is ground for the belief that in the last analysis human ideals find their reasonableness and their imperativeness in the personal and ideal character of our cosmos.

C. The Problem of the Cultural Status of Values

We shall briefly present the situation that values may be classified as practical and theoretical. We might, in this same connection, call them biological and cultural. In short, some values help us to make a living; others help us to make a life. The two types of values are far from being mutually exclusive. Is physiology a technology or is it a cultural discipline? Is economics an instrumental science, or is it an avenue toward a better appreciation of human civilization? Is art a vocation, or is it a field for contemplation? Just the statement of these questions reminds us that there is no real line of demarcation between knowledge which is practically useful and knowledge which is emotionally enjoyable.

The aim of education should be to inculcate in the pursuits which aid man in meeting the environmental situations of life, elements of understanding, appreciation, and social feeling which would give them the character of the ancient humanities. Medicine, agriculture, economics, sociology, engineering, mathematics, and hygiene should be taught not only to provide instruments for furthering biological fitness. These sciences and others, which often have an exclusively technological aim, should give to the student a sense of the wonder of knowledge, the meaningfulness of nature, and the dignity of man. On the other hand, such studies as esthetics, literature, art, philosophy, and religion should cultivate a cultural appreciation which would include full recognition of man's responsibility to actively participate in movements for the betterment of the physical and biological conditions of human life. Technological values should be more intrinsic; cultural values more extrinsic. We are psychophysical beings, and no education which does not, some place and some time in its program, teach the hands and the heart, as well as the head, can ever fulfill the requirements of a complete personality.

The interpenetration and overlapping of the fields of practical and theoretical values is indicative of the fact that values are one. There is fundamentally no contradiction between a bodily value, as health, and a spiritual value, as courage. For a man to be truly healthy, he must be courageous. He must be daring enough to furnish for his physical welfare the best inducements and provisions that his environment can be made to contribute. He must be brave enough to refrain from all activities which are detrimental to his physiological excellence. To be truly courageous, on the other hand, involves the presence in the individual of adequate health. Courage, as a virtue, is correlated with certain biological phenomena which make it imperative for a man who would be brave in any cause to attend well to the conditions of his bodily organs and functions. Socrates emphasized the oneness of values when he insisted that virtue is knowledge and knowledge is virtue. This ancient sage held that no man would knowingly do the wrong. In his judgment it is an essential feature of knowledge that we should understand, to the point of carrying out the implications of the understanding, the consequences of moral behavior. Who can say whether truth is more important than friendship, honor than prudence, technological efficiency than esthetic appreciation? Carry any one of these values to its complete expression and you will reach the same wholeness and harmony of experience which you would attain if you should follow to its final implication the leading of any other one of the values. Most of our great ethical theories recognize the interrelationships between the different types of value by pointing out that the violation of any one of the moral laws means disobedience to them all. A certain few moral excellencies, moreover, are set up as norms which, if achieved, would involve loyalty to all the minor rules of an ethical life. For instance, according to the Christian tradition, if one were impelled by love, the subsidiary phases of virtuous thought and deed would find easy and enjoyable performance.

In asserting that all values are ultimately one and that all finally lead to the same valuable experience, we do not mean that all values are equally significant and worthy. If one were a perfect artisan one would probably enjoy the same comprehensive and coherent consciousness experienced by a perfect scholar—gratuitously granting, of course, the possibility of attaining perfection in either of these fields. But the experiences of the artisan and the scholar are not ordinarily to be called equally important because of their identification in the realm of perfect knowledge. The average artisan is further removed from the ideal experience than is the average scholar. The scholar should have attained experiences which, in emergency, would enable him to do the work of an artisan. The usual artisan, however, could not be expected quickly to perform the functions of a scholar. In short, the standard of value, like the standard of truth, may be found in the whole. Intrinsic and theoretical values are better because, being closer in scope and character to the absolute truth and goodness, they include, as constituents of themselves, the extrinsic and practical values. This view is an axiological aristocracy, but not an axiological autocracy. In a world where individuals may attain unto free, rational activity, to say that theology is better than technology, metaphysics better than physics, and esthetic appreciation better than experimental analysis, is to challenge the spirit of man. True philosophy is not the repudiation of, but the realization of the realm of facts. There are several ways to health and harmony of the soul, but the philosopher always goes "through nature to God."

The function of philosophy being preëminently with intellectual rather than physical concerns, our attention will be exclusively directed toward those values which have to do with the spiritual needs and opportunities of man. In the next chapter we examine the three of the four main fields in which cultural values find expression. The realm of truth as an axiological domain was fully treated in our epistemological considerations. The three spheres of axiological import immediately to be discussed are: *ethics, esthetics,* and *religion.*

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CHAPTER XVIII

THE PHILOSOPHICAL FIELDS OF VALUE

ETHICS, esthetics, and religion are axiological disciplines of great philosophical import. They are universal in scope. All peoples of all ages have been concerned with the views of thought and action which these three interests of man represent. They are fundamental in nature. The principles of all of these intellectual pursuits have been presented at some time or another as significant of the basic structure and motive of the universe itself. The main concepts in these fields of value, like law, morality, goodness, order, beauty, holiness, love, personality, and God, are categories which, throughout the history of the race, have brought intellectual and emotional satisfaction to the human mind and heart. The only culturally important axiological interest besides these three is logic, with its category of truth, a category which was examined in our epistemological inquiries.

What are the essential features of ethical, esthetic, and religious theory? We shall discuss the sphere of ethics first.

I. The Realm of Ethical Values

What is the good life? How is it attained? Is it possible for all? How can we promote it? These are questions for ethical discussion. Ethics may be defined as the science which studies human behavior in so far as the behavior may be judged to be good or bad, right or wrong. Ethical behavior is good or bad according to the nature and proficiency of our ideals and motives. Right and wrong are judgments which refer to the success with which we conform to the standards set up by the group, or groups, to which we belong. A man may be good in the sense that he lives up to his own best insight and ideals, but at the same time be immoral in that his actions may not be in conformity with the customs and institutions of society. Most of the moral difficulties in life arise out of the conflicts between personal aspirations and social prescriptions. The ethical utopia would be a society in which the will of the community as a whole would support the noblest and most progressive motives of the individual man.

Ethics, as a science, may be treated from four standpoints: namely, the standpoints of the evolution, psychology, application, and theory of morality. In other words, there are genetic, psychological, practical, and theoretical ethics. The first three types of ethics are descriptive; the fourth is normative, as well as descriptive. The fourth is preëminently the philosophical type and will, therefore, receive the greatest part of our attention.

Genetic ethics examines the behavior of man as it develops from the primitive level, in which man is controlled by instinct and impulse, through the level of customary morality, in which the folkways, mores, and institutions of the group determine conduct, to the rational stage, in which man acts according to personal ideals attained by means of critical reflection or through the deliverances of private conscience. Genetic ethics is studied in ethnology, anthropology, social psychology, and sociology. L. T. Hobhouse, E. Westermarck, C. H. Cooley, W. I. Thomas, J. G. Frazer, and W. G. Sumner are outstanding investigators in this method of studying morality.

Psychological ethics studies the mental experiences or the bodily activities involved in the achievement of character. The influences of physiological functions in the development and expression of moral traits have just recently become the object of scientific experiment. Historically, the psychological interest in morality has been directed toward two objectives: namely, to describe the relation of pleasure to conduct and to indicate what emotions incite man to moral endeavor. The first historical concern dealt with such questions as, Do men seek pleasure? Are the various aims of life sought because their attainment would bring pleasure? Could an act be morally justifiable if it resulted in more pain than pleasure? We cannot go into these questions. Sufficient it is to say that now we regard pleasure as the test of the usefulness and satisfactoriness of morality, rather than as the dynamic motive behind the moral life. We do increase the pleasure of mankind by furthering goodness, but this does not mean that man always furthers goodness just in order to increase the pleasure of himself and others. Man acts generally in ordinary affairs and always in moments of heroism without any thought of the pleasurableness of the consequences of his actions. The second historical concern of psychological ethics has to do with the nature of the experiences which prompt men to ethical behavior. What are the incentives to morality? Is man's interest in the good life the result of instinct, vital impetus, will to power, sympathy, gratitude, inspiration, appreciation of order, or rational insight? The answer is not found in any one psychological process but in the complex of all the experiences, cognitive, emotional and volitional, which incite and sustain his behavior.

Practical ethics is closely related to political science and economics, as well as to sociology. The investigator in applied ethics has a threefold concern. In the first place, he seeks to interrelate the various fields of social activity. He tries to indicate the interdependence between the realms of the home, state, church, school, business, and amusement. In the second place, he acts as a critic of the different phases of social activity. He evaluates the different types of social orders and institutions, and attempts to point out what phenomena make for their deterioration or progress. In the third place, the student in the realm of practical ethics seeks to ascertain what specific programs and policies should be carried out to ameliorate the social conditions of mankind. He is concerned definitely with human betterment by suggesting remedies for the evils of divorce, war, disease, poverty, insanity, intemperance, lawlessness, and so on. The investigator in this field supplements his academic knowledge with information gathered through statistics, and from the reports of all sorts of welfare and philanthropic agencies.

Theoretical ethics deals with the main doctrines of the good life which have been presented throughout the history of reflection in the domain of morality. Theoretical ethics assumes that man is an intellectual being, that he can, by the observation, comparison, analysis, and generalization of the facts of human life, acquire norms for the guidance of conduct. Theoretical ethics also assumes that the ideals which man attains through intellectual insight and effort may become authoritative determiners of his behavior. In short, the exponent of theoretical ethics assumes that the human individual is free, in the sense that ideals of his own choice may influence his conduct no less than forces in his physical and biological environments. There have been three main types of ethical theory: hedonistic ethics, rationalistic ethics, perfectionistic ethics. Let us notice each of these kinds of ethical doctrines.

A. The Ethics of Hedonism

The hedonistic standpoint in ethics is that of those who say that the good life is the type of existence which brings to man the most pleasant experiences. The word *hedonism* comes from the Greek word ἡδονή, which means *pleasure*. The hedonist looks at an individual from the standpoint of science. He sees man as a physiological machine needing to adjust himself to a physical and social environment. The hedonist does not treat morality as the resultant of man's motives, free choices, and ideals. The hedonist looks at man primarily from an external point of view, and, since pleasure is a factor which can be measured in terms of successful adjustments of the individual to his environment, the good life is that which makes for the most pleasure. Among the hedonistic theories, three main divisions stand out: Epicurean hedonism, economic hedonism, and evolutionary hedonism.

1. **Epicurean hedonism.**—This type of hedonism following, of course, the doctrines of Epicurus (341–270 B.C.), treats man's goal in life as personal pleasure. The standpoint is egoistic, but it is not base or mean. The Epicurean holds that the best life is the one which gives the individual the most pleasure, but insists that the pleasures of friendship and intellectual attainment are more desirable, by far, than the pleasures of appetite. Walter Pater and Anatole France may be taken as modern representatives of this view.

2. **Economic hedonism.**—This form finds its chief expressions in the doctrines of Jeremy Bentham (1748–1832) and John Stuart Mill; it is more altruistic than that of the Epicurean point of view. Economic hedonism, usually called *utilitarianism,* seeks to find out what is good for the people at large. The Epicurean, the hedonist of antiquity, was pessimistic regarding man's ability either to manage external nature or human society. The ideal of the Epicurean, therefore, was to live a life of detachment, serene, cultural, in the company of congenial friends, away from all the responsibilities and the vicissitudes of the work-a-day world. The utilitarian is of more democratic, optimistic, and adventurous mind. He believes that through science nature can be manipulated for man's welfare and that ethical achievement is possible for the masses of mankind. For the utilitarian the good life is that which makes for the greatest good for the greatest number, the good being most pleasures of the greatest value.

3. **Evolutionary hedonism.**—This theory also treats the good life as that which brings happiness to the greatest

number. But in it happiness is just the concomitant of a more significant value, namely, the life quality of the individual and the race. The good life is that which shall make for the ongoing of the species and the vitality of the individuals. Virtues according to this point of view, are not ends in themselves: they are instruments for the furthering of the life of the race. The evolutionary hedonist has built up his theory on the analogy that society is like an organism. Individuals are the cells, institutions are the organs, the community at large is the organism itself. Morality is considered in terms of the individual and social activities which make for the health of the societal being. Auguste Comte (1798–1857), Charles Darwin (1809–1882), Herbert Spencer (1820–1903), and Friedrich Nietzsche (1844–1900) are exponents of this ethical standpoint.

B. The Ethics of Rationalism

The rationalists in ethics are those who think of the moral life in terms of man's inner experiences. They think of a good man, not as one who attains his own happiness and the happiness of others, but as one who is true to his inner light. The moral ideal is not something which we arrive at by studying man's needs in the light of his environment. To the rationalist, the good life is not to be gauged in terms of consequences. Goodness is obedience to a sense of duty, and the sense of duty is an *a priori,* non-scientific principle, which is revealed to us by reason. There are three kinds of rationalists in the ethical field: intuitionists, stoics, and transcendentalists.

1. **Intuitionism.**—Intuitionism is the doctrine of those who think of conscience as an inner voice relevant to experience, but underived from experience—the will of God in the human consciousness. These deny that conscience is merely an appreciation of public approval or disapproval. Conscience, to the intuitionist, is not *attained* through experience; it is *obtained* in experience. This conscience may be in the form of a direct and definite

prescription in the midst of a specific problem, telling us to do or not to do a certain thing. Conscience may also be an immediate appreciation of certain principles, as love, justice, benevolence, which rise in our experience in a time of perplexity to serve as guides in the solution of our problems. Or, finally, conscience, according to some intuitionists, is an esthetic sense of the fitness of things, of the harmony of life, of the beauty of holiness. To a person with this artistic sensibility sin is immediately revolting and deplorable, not because it is wrong, but because it is ugly.

Thomas Reid (1710–1796) and Jonathan Edwards (1703–1758) were believers in conscience as a specific guide in particular situations. Plato (427–347 B.C.), with his four cardinal virtues, courage, temperance, wisdom, and justice, and Henry Sidgwick (1838–1900), with his ethical concepts of prudence, benevolence, and justice, may be regarded as intuitionists who emphasize the importance of rational principles in ethics. The esthetic intuitionists are represented by the third Earl of Shaftesbury (1671–1713) and James Martineau (1850–1900).

Inasmuch as in our discussion of epistemology we merely suggested intuitionism as one theory of the source of knowledge, it might be well to elaborate the doctrine at this point. For although in ethics intuitionism finds a very important manifestation, it is also a theory applicable to knowledge received in other fields of human interest, especially mathematics and metaphysics.

Intuitionism, like mysticism, maintains that true knowledge must always involve a feeling experience. We do not mean here that knowledge may be pleasant or unpleasant. To the intuitionist, feeling is not a state of enjoyment or distress which a person possesses when he knows some object. To the intuitionist, feeling is itself a knowing process; feeling is cognitional. The term *feeling* is used in intuitionism because intuitive knowledge has the essential characteristics of emotional experience.

Like emotions, intuitions are not stimulated by any special end-organs. Both types of experience, furthermore, have an immediateness, intensity, authority, and vitality not found in the intellectualistic processes of perception and conception. Intuitions are like emotions again in that they do not analyze situations and objects; both processes apprehend their stimuli as totalities, however small or large the totalities may be.

New neighbors move next door to us. We know at once upon first acquaintance that we shall like the new arrivals and that we shall have pleasant relationships with them. This knowledge is not the result of analysis, criticism, and comparison. It is an immediate insight; we have a feeling that we shall like the neighbors, we say. Or to use common parlance, we say that we have a *hunch*. Another illustration of intuitive knowledge is the awareness of our own selfhood. There are logical and psychological arguments for the self, but they lack the force of immediate apprehension of the ego. We cannot prove to another that we have self-knowledge, but, if the other himself has this assurance of selfhood, he will appreciate at once our belief that the self can be directly known. Of course, all individuals do not have intuitions of selfhood, but all individuals do not possess all the percepts and concepts experienced by others. A third example of intuitive knowledge is that emphasized by Henri Bergson. Bergson points out that it is only by intuition that we get a sense, or better, a feeling, of the livingness of reality. If we had only intellectualistic knowledge, our notion would be that the things of the world are static and separate. But the consciousness of reality realized in intuition shows us that our universe is a dynamic, free, continuous process. Again, there are mathematical intuitions. That a straight line is the shortest distance between two points and that things equal to the same thing are equal to each other are notions entertained only by individuals of considerable intellectual ability, to be sure, but they are not notions which follow long study and experiment. We ''feel'' their truth at once, or we do not appreciate their truth at all. Finally, there are the moral intuitions which we have already presented. All of these types of intuition are subject to the same criticism. Intuitions are a source of knowledge. Their validity is not to be vouchsafed by their immediateness or by their directness. They must be judged by the same criteria of truth applied in other fields of knowledge, namely, the utility and coherence tests of knowledge, discussed in our epistemological considerations.

2. **Stoicism.**—A philosophy developed in Athens by Zeno (336–264 B.C.), who taught in a porch called the Stoa, still has great influence in ethical reflections. The Stoics, like the intuitionists, emphasize duty. They say that the good life comes from obeying nature, but nature to them is to be interpreted in terms of its highest property, which is reason, and not in terms of the physical characteristics emphasized by the hedonists. The Stoics believe there is a world reason, the *logos,* which they call providence. This world reason pervades all reality. The ethical vocation of man is to allow this reason to express itself in his own nature. This he can only do by suppressing sense, appetite, and feeling, which thwart the participation of the divine principle in human selfhood. The Stoics, because of their belief that the divine mind is in all creatures, find every individual of value, and thereby espouse their theory of universal brotherhood, or cosmopolitanism. To them, persons are valuable not for what they *have, do,* or *are,* but they are valuable, strange as it may seem, for what they have not, do not, and are not. In short, they are valuable primarily because they have in them the meta-human element of the divine reason. This principle is very similar to the Christian idea of human worth, that man is saved by grace, that redemption is the gift of God. Among the Stoics the following are important: the slave-philosopher, Epictetus, of the first century A.D.; and the emperor-philosopher, Marcus Aurelius, 121–180 A.D.

3. **Transcendentalism.**—This ethical theory is a modern expression of the Stoic doctrine that the moral life should not be concerned with consequences of human law so much as with the moral law with which man should be in conformity. The outstanding exponent of this modern expression of stern morality is Immanuel Kant (1724–1804). For Kant, the only thing which is good without limitation is a good will. Not even intellectual capacities, practical moral virtues, or physical benefits are to be called good in the sense that a good will is good. A will is good, not because of its consequences, but because it is good in itself. It is good in itself because it carries out, or better, wills to carry out, the law of duty. The law of duty which governs the will Kant calls the *categorical imperative.* The categorical imperative is binding on the will not because it leads to valuable ends. The desire to do good, which is based upon the desire for practical and expedient results, is called the *hypothetical imperative.* The categorical imperative appeals to man, not because he is prudent and practical, but because he is rational. The categorical imperative has the universality of an *a priori* principle, derived from pure reason.

This mandate, apprehended by pure reason, is as follows: Act only on that maxim whereby thou canst at the same time will that it shall become a universal law. Put in another form, the imperative is: Act as if the maxim of thy action were a law of nature. Inasmuch as other individuals are also centers of moral will, we should treat all persons as ends. The outcome of a morality in which men would treat each other as ends would be a *kingdom of ends.* Kant's theory is, in short, an insistence that man should act in obedience to the Golden Rule and thus establish a true society of selves. Since the moral will, with its high standards, is thwarted in its actual expression in the realm of concrete social affairs, Kant vouchsafes the autonomy and value of the moral self by postulating a noumenal world in which man is free and immortal and in which, because of God, the ethical purposes will be realized and virtue and happiness will coincide. In other words, Kant believes that a man, however handicapped he may be in the execution of an ethical purpose, can be good, if his motive to carry out the purpose is rational and sincere. The world being a moral universe to Kant, in the long run the good motive will find expression and fruition.[1]

It must be recognized that, before we can know when our will is good or how we can employ the categorical imperative to good service, we must leave the level of pure reason and procure information from the realms of common sense and practical affairs. It must also be recognized, however, that not until we believe, with Kant, that the moral principles derived by our best scientific investigations of actual social phenomena are somehow or other expressions of a cosmical law, will morality possess a sanction which will command obedience. Nobility and adventuresomeness in conduct require a stimulus which prudential insight into the practical consequences of our behavior can never provoke. The person who would follow the Kantian ethic must beware of two pitfalls. He must not confuse wishing with willing. The will, to Kant, is not a pious hope, but a dynamic impetus, which drives the individual to realize the Golden Rule to the farthest extent of his ability. Again, one must not become fanatical about his motives. Other persons have zeal for causes also. Duty is the voice of God, but so is sympathy. The Kantian is right in emphasizing the glories of obedience, but he must remember that one can be obedient without becoming an ascetic. One may really ''delight in the law of the Lord.''

C. The Ethics of Perfectionism

The moral problem may be regarded in the light of a dialectic process, manifesting the features of thesis, antithesis, and synthesis. The thesis would be the notion that morality is the description of the most adequate adjustment of the human physiological organism to its external environment—hedonism. The antithesis would be that morality is the expression in a spiritual personality of the rational principles of a universal will—rationalism. The synthesis is found in the doctrine which combines the best features of these two opposing standpoints, namely, perfectionism. The perfectionist believes that man is a physiological organism, but he also believes that this physiological being is the condition and instrument of a more valuable self, which includes spiritual as well as physical elements. The perfectionist acknowledges the influence of heredity and environment, but he points out that these forces may embody certain cosmical principles representative of a universal purpose, and insists that, in the individual, besides the hereditary and environmental factors there are the personal determinants, as ideas, hopes, emotions, choices, and so on. Perfectionism does not imply piousness. The term connotes wholeness and completeness. It is indicative that there is an ethical theory which embraces and reconciles both the hedonistic and rationalistic views. We shall consider briefly three perfectionistic doctrines.

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[1] See ''The Metaphysics of Morality,'' translated by John Watson. (The Macmillan Co.)

1. **Eudæmonism.**—This is the perfectionistic theory which sets up "health and harmony of the soul" as the objective of a good life. The term comes from the Greek word εὐδαιμονία, which means *well-being*. A modern name for the doctrine is the *theory of self-realization*. The conception is true to hedonism in that it regards man as a biological being, but it goes beyond hedonism in believing with the rationalist that man can attain the character of a free, rational person. Happiness comes with the realization of one's capacities. Man is most truly human when he carries out the responses which are peculiarly human. Complete selfhood may be achieved either by developing one's intellectual potentialities or by developing one's social powers, or by developing both of these phases of his

life. Some will find happiness in art, philosophy, science, and religion. Others will attain the good life in service for the family, state, church, school, and industry. A few will be able to realize the extraordinary richness of experience which comes with a combination of social activity and cultural appreciation. The eudæmonist will emphasize the welfare of the body and he will extol the worth of education. Abundant life will be realized either in the contemplation of God or in practical devotion to a divine cause. The ideal life would be one in which an intellectual love of God would be blended with service for humanity. Although they differ in their notions as to which capacities of man should be chiefly developed, all of the following philosophers agree that the end of man is to realize the potentialities of his nature: Aristotle (384–322 B.C.), Thomas Aquinas (1225–1274), Thomas Hill Green (1836–1882), Friedrich Paulsen (1846–1908), and Rudolph Eucken (1846–1926). Among contemporary thinkers eudæmonism is probably the most widely held ethical theory.

2. **Absolutism.**—The absolutism which we are now discussing is the ethical aspect of absolute idealism. It is the sociological corollary of the principle that the true is the whole. In the social realm the whole is the state or community. To the ethical absolutist, morality means the expression of the state or community will. This theory is not that of Kant, because the larger will here is one which represents the immediate practical well-being of the individual. Obedience to the state is justified by the consequent enhancement of the individual's physical, social, and cultural being. Duty to the state is imperative, but with duty there also go rights and privileges. The particular self is dependent upon the communal whole, but he is of worth and dignity because he, to an extent at least, is a bearer and a sharer of the values of the whole.

The responsibility of the individual, according to the absolutistic ethics, is to become a member of the most comprehensive, orderly, productive, rational, permanent, and useful community. The responsibility of the community, or rather of those upon whom the government of the community rests, is to develop a social system which will make for the highest type of good for the greatest number of individuals. But, even when these responsibilities are met both by the government and the subject, this system will not represent an adequate ethical doctrine. The state may be wise and benevolent, but, after all, the individual's freedom is negated in absolutism. Man esteems highly the efficiency possible in a social organization like the absolutistic state, but man esteems more highly a community which, however weak, is, to some degree, the product of his own wisdom and work.

Hegel, as might be expected from his ontological theory, already discussed, is the chief exponent of absolutism in ethics. Josiah Royce (1855–1916) gives to the individual considerable power and value, but the Roycean conception of the beloved community, to which the individual should be loyal, is, in motive, practically the same as the notion of Hegel.

3. **Pragmatism.**—Ethical pragmatism is for the most part a hedonistic theory. There is, however, in pragmatism an interest in ideals and in ideal communities, which makes the doctrine similar in tone to a rationalistic standpoint. The pragmatist does not believe in preëstablished principles of morality, nor does he believe that our present social life is the concrete, temporal embodiment of some otherworldly, eternal pattern. The pragmatist does believe, however, in a state of society hardly less glorious than that presented in the religious postulations of the rationalists. This ideal community will come through human ingenuity and invention, and not by the participation of divine forces in human affairs. The splendid society will not be one to enjoy in sentimental imagination; it will be one in which, by virtue of the scientific control of nature, we can actually live, and move, and have our

being. In John Dewey we find the chief philosophical exponent of this ethical outlook. Professors M. C. Otto and T. V. Smith are other outstanding supporters of this standpoint.

When pragmatism, which is primarily a logical and epistemological discipline, becomes an ethical theory, it takes on a religious cast, no less than do other ethical doctrines. The religion of pragmatism is a type of *humanism;* it is the religion of humanity; God is present in the conception, but he is the great social ideal, set up by creative intelligence for the guidance and inspiration of aspiring man. This idea is fascinating; it does challenge us to heroic endeavor; it appeals to those who would risk themselves for causes. But, after all, one will in time come to wonder whether it is worth while to risk one's life for a goal which is but a human hypothesis. He will question whether it is worth while to erect a city whose builder and maker is merely man. Religion requires not only that there be values in the world, but also that these values prevail. We are of the judgment that the God of psychology and sociology must be the God of ontology and cosmology, if any law which we may call divine is to persistently rule our moral will.

II. The World of Esthetic Values

Our concern now is with the realm of beauty and art. What logic is to knowledge and ethics is to morality, art is to beauty. Art is the way judgment expresses itself in the field of esthetics. Taking it for granted that everyone is acquainted with beauty in its ordinary, commonplace manifestations, we shall only examine situations of beauty in which capacities for criticism and appreciation are fairly well developed. In short, we shall consider the problems of beauty as they appear in the scientific study of art, called esthetics. Our discussion will involve brief treatments of the nature and function of art.

A. The Nature of Art

When we defined art as the esthetic judgment, we admitted into our theory the debate as to whether art is objective or subjective. We can indicate the different definitions of art by suggesting what each of these rival standpoints maintains.

1. **The objectivity of the esthetic judgment.**—Is beauty a quality of things, or is it a quality of conscious states, or is it both? The ordinary view, of course, is that art is not true to the fact world. It is, to the man in the street, a realm of imagination, of escape, of ''make-believe,'' of idealization, and of personal creation. How correct is the naïve view?

The objectivist acknowledges that there could be no esthetic experience without a self to experience, but he finds the basis of the esthetic experience in the artistic character of the stimulating environment. If we feel delight in certain situations, then delightful objects must be present to our perceptive faculties. To be a better artist means to be a better discriminator, a better reflector of the outside world of beauty. To the objectivist, the radiance of the sunset, the delicacy of the lily, the fragrance of the rose, the rhythm of the dance, the splendor of the moon, the refreshing coolness of the mountain stream, the orderliness of the heavenly bodies, these and scores of other esthetic experiences all depict the externality of beautiful qualities. Contrariwise, to the objectivist, features of ugliness also have the aspect of ''out-thereness.'' The objectivity of the beautiful or ugly character of objects is not characteristic only of natural phenomena. Airplanes and automobiles have inherent esthetic properties which are essentially present in these man-made objects. Interpreters of the esthetic experience have referred to the objectivity of beauty by calling attention to the detachment and isolation of a beautiful object and by emphasizing the state of repose in the consciousness of one who contemplates the beautiful object.[2] Certain conditions must be present if objects are to impress us as beautiful in themselves. Unity, order, balance, symmetry, colorfulness, rhythm, harmony, design, restfulness, and proportion are outstanding properties, some or all of which must characterize the scenes, songs, dances, statues, or pictures which, by their very nature, impress us as being intrinsically of esthetic merit. In the history of art, Plato may be taken as a prominent exponent of the objectivity of beauty.[3]

Opposed to the objective view of beauty is the subjective position that beauty is not resident in the environment of man. His environment is esthetically neutral. To the subjectivist, beauty is ascribed to external objects because of certain feelings we have in our relation with them. Let us notice this notion further.

2. **The esthetic judgment as subjective.**—The subjectivist in art argues from two standpoints: the *hedonic* and the *activity* aspects of the esthetic experience. These two perspectives are not at all mutually exclusive.

a. The hedonic theory is that the esthetic experience is one which brings satisfaction to the experiencer. Art is valuable as a bringer of pleasure to the human consciousness. The finer the art, the more excellent the pleasure. The awareness of beauty means ecstasy, exhilaration. In contemplation we are thrilled, carried away, absorbed. We enjoy the dancing, we revel in the symphony, we delight in the story, we bask in the sunshine. The agreeable feelings which we experience in esthetic situations are due largely to a psychological phenomenon called *empathy.* The term is E. B. Titchener's translation of Theodor Lipp's "Einfühlung." The phenomenon is the motor activity in the organism which is presented with esthetic stimuli. The physiological activities may or may not be recognized in consciousness. When we perceive certain objects or performances we have the sensations of stress and strain in our muscles and joints which we would experience in making the objects ourselves or in carrying out the performances ourselves. The high arches of a Gothic cathedral are elevating to man not only spiritually, but in the sense that in our perception of them we actually do brace ourselves up physically; the picture of a storm at sea is strenuous because our perception of it involves a tautness of muscles and a nervous tension; the song is harmonious, not only in that it has a unity of form and content, but also because, in our consciousness of it, we enjoy a feeling of restfulness and quietude. Often the pleasant feelings which enter into the total psychical complex in an esthetic moment are not immediately originated but are the reproduction from memory of feelings first experienced days or years ago.

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[2] See H. S. Langfield on the theories of Münsterberg, Puffer, and Bullough, "The Aesthetic Attitude," Ch. III. (Harcourt, Brace and Co., 1920.)

[3] See C. J. Ducasse, "The Philosophy of Art," Chs. XIII, XIV. (Dial Press, 1929.)

Empathy, or the *feeling into* an esthetic object or exercise, may be carried to the extreme that the kinesthetic sensations overpower our intellectual discernment of the beautiful stimulus. Critics of art, therefore, are careful to maintain a certain impersonal attitude in their observations, and actors must be sure that in stimulating the feelings of an audience they do not prevent the audience from noting the factual details of the play. Art must be feelingful; all standards of good art, if art is to have standards at all, must be rational, rather than emotional. We must not believe that every psychological state of empathy means the possession of an esthetic experience.[4] Our feeling, in the esthetic situation, must possess three properties, as B. Bosanquet has pointed out. These properties are *permanence*—it does not soon, if ever, reach the point of satiety; *relevance*—the feeling must refer to an actual state of affairs outside of the experiencer; *community*—

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[4] For exposition of empathy, see H. S. Langfeld, ''The Aesthetic Attitude,'' Chs. V, VI.

the feeling must be one which can be shared with others.[5]

b. A second type of subjective esthetic experience is propounded by those who believe that art is fundamentally an expression of human *behavior.* The esthete is the source rather than the recipient of esthetic feelings. There are four types of esthetic doctrine which emphasize the importance of the individual and, at the same time, stress the individual as a producer rather than a procurer of the artistic emotions. Let us notice briefly these four kinds of theory.

Firstly, there is the esthetic notion that art is the expression in works of one's own emotions with the purpose of arousing in others the same emotional experiences. Secondly, there is the conception that art is creative in the sense that it is the outward response of one's feelings and ideas. The test of its validity is not, as in the first case, social acceptance and approval. According to this theory, it makes no difference whether the work of art is ugly or beautiful. The sole aim is to produce a work which will serve as an outlet for the artist's inner experiences. Self-expression is the exclusive purpose, and sincerity, honesty, and completeness of self-expression are the only tests of the artist's proficiency. Thirdly, there is the doctrine that art is the fulfillment of one's hopes and aspirations. It is a form of wish-realization. It provides man a compensatory experience to offset the disappointments he receives in the drab, exacting, work-a-day world. Fourthly, there is the view of those who believe that art is a human activity which should be of practical usefulness in man's social relationships. Art must make life more ethical as well as more enjoyable. We shall consider this fourth conception in more detail in treating the function of art.

In concluding this section on the status of esthetic values we should like to suggest that the objective and subjective points of view are not contradictory, but supplementary. As conceptualism became a reconciliation between realism and nominalism in ontology and epistemology, so it is possible to believe that values, no less than universals, may be both transcendent to and immanent in human experience. When we know more psychologically about the axiological feelings, much of the relativism in our notions of beauty, which now encourages many to hold the subjectivistic position, will be accounted for and remedied. When we know more about the ontological environment of man, we may learn that the values which the objectivist projects there are not otiose entities, but dynamic, purposive principles, which participate in social as well as in cosmical developments.

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[5] See ''Three Lectures on Aesthetic,'' Ch. I. (The Macmillan Co., 1915.)

B. The Function of Art

The views that art must be of practical service to humanity may be classed into two main groups: the theories which present art as physically useful, and the theories which regard art as an instrument of philosophical worth. We shall examine briefly these two standpoints.

1. **Art as an aid to the physical life of man.**—Art has been physically important to man in three ways. In the first place, the art impulse has provided man with a method for the expenditure of his surplus energy. Art has often been a form of play, and even to-day many of the arts are largely significant because of their amusement value. An art which represents a healthy individual in spontaneous activity—as, for instance, the primitive dance—furnishes a medium for the physical exercise so necessary in the development of a graceful, agile body. Furthermore, the play forms of art, as in cases of musical festivals, incite in men the requisite courage and zeal for the prosecution of a strenuous work or a dangerous work. A second physiological utility of the arts is to be found in the relation of the esthetic interest to the making of weapons, boats, utensils, houses, and so on. The arts and the crafts have always been closely associated. And it so happens that frequently the object of craftsmanship which is the most artistic is

the most useful. The arrowhead most true esthetically makes the best projective; the hut most attractive artistically is also the most convenient and the most comfortable; the boat of most esthetic pleasingness is the one which plies the lake most swiftly. Finally, in certain arts, as literature and music, man has narrated his customs in the various human pursuits. Because of the knowledge which he receives in the epics and songs of human beings of centuries gone by, contemporary man is able to make for himself a more abundant life.

2. **The philosophical function of art.**—In the first place, art is an instrument for the enhancement of *individuality.* Those who because of environmental or hereditary handicaps are thwarted in the attainment of glory or in the execution of great tasks can vicariously enter, in art, into the achievements of others. This enjoyment of the attainments of others need not bring a contentment which results in complacency; it may even produce in the enjoyer an aspiration and ambition to realize a higher state of selfhood. Individuality is also enhanced by esthetic activity because the artist grows personally as he creates his beautiful object. His consciousness takes on unity and richness as he concentrates upon and serves the goal of his interest. Finally, the artist recognizes himself to be of worth and dignity, because he realizes that he is producing a work which will last for the instruction or enjoyment of society when he himself will be dead. Apart from assurances of personal immortality, he will have the satisfaction of living in a permanent product of his own mind and hands.

A second philosophical import of art is found in the relation of art to *morality.* The artist is justified in insisting that art, so far as it is art, is non-moral, or ethically neutral. Art, as such, need not be judged on the basis of its contribution to human betterment. The artist cares whether a picture is beautiful or ugly. It is not his concern to determine, as an artist, whether it is morally good or bad. We may admit, however, that the justification of art from an artistic standpoint is beauty, or the satisfaction which the contemplation or creation of beauty implies, without acknowledging that the moralist has no right to intrude into the field of art. For works of art can be estimated on the ground of ethical consequences, no less than by the criteria of pure art. Let us notice some of the moral implications of art.

Art is a socializing influence of tremendous power. It has a universality of appeal enjoyed by no other cultural pursuit. Intellectual disciplines pertain to ideas, and these change with time, clime, and country. The esthetic activities attract the emotions of man, and the human emotions are the most changeless features of his psychological experiences. The works of art of foreign peoples we accept with high esteem, although we may reject vigorously their philosophies and their politics. As G. T. W. Patrick asserts:

> Art is thus the great harmonizer, the pacifier, the reliever. It relieves social tension, and conduces to peace and good will. Works of art are not objects of desire. We love to have others share in our aesthetic joy, so that the eternal strife over mine and thine, as it pertains to houses and lands and material goods, is abated in times of aesthetic enjoyment, and life is lifted to a higher plane. The soothing effect of music upon us as individuals is familiar, but it produces social harmonies as well as harmonies of soul.[6]

Besides its socializing value, art is justified by the ethical import of the cultural consciousness which it brings to the individual. Some of the benefits to the individual have already been mentioned. These benefits are parts of the total complex of satisfying experiences enjoyed by the lover of the beautiful. Art, like religion and science, is an avenue to the most potent and most excellent states of mind which one can possess. There is an expansiveness, a freshness, a geniality, a robustness, a sympathy, a purity, and an adventuresomeness in the spiritual nature of the true esthete. The sense of freedom experienced by the beholder of and the believer in beauty produces a spirit of good will and tolerance. It is the man without music in his soul who is fit to be the knave. Again, besides giving the individual incentives to altruism, art also provides him with ideals for heroic action and warnings against behavior which is brutal or vile. Some of the greatest pictures, novels, oratorios, and plays present, with all their artistic excellence, powerful moral preachments. Finally, the life of the lover of art is the greatest testimony to the worth of beauty to the individual soul. Like the religionist, the artist is known by his loyalty to his profession, and in persecution is he tested. When we see a young painter, penniless and in rags, working day in and day out on unsalable pictures, art appears, not only of ethical import, but even of spiritual worth. When we note the sacrificial devotion which many of the great artists have given to their calling, the cry ''What value art?'' becomes rank blasphemy. Art must bring to her devotees a peace which the world cannot give nor ever take away.

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[6] "Introduction to Philosophy," p. 433. (By permission of, and by arrangement with, Houghton Mifflin Co., 1924.)

There are, of course, dangers and difficulties in the appreciation of the beautiful. It is easier to contemplate forms of art that appeal to the senses than the forms of art that appeal to the higher faculties, and sometimes great moral force is necessary on the part of the individual to prevent him from succumbing to the lower forms of beauty. The moral condemnation for such degeneration comes not from the fact that the appeal of the sensuous in itself is evil, but that such practice will stultify appreciation of those forms of art which appeal to the soul. It is an easy descent from the *appreciation of the sensuous* to an *appetite for the sensual.* The zeal for the higher instead of the lower values is not, however, an aspiration which is incumbent upon the esthete to provoke in his followers. The motive power for moral progress is a force which traditionally has been a religious responsibility to effect in man. We are, therefore, brought to a consideration of religious values as the axiological principles in which the meanings of ethics and esthetics find consummation.

III. The Domain of Religious Values

We have repeatedly suggested that values, however characteristic they may be of the extrahuman world, come to their most meaningful expression in the experiences of finite selves. To put it another way, we have indicated that values are most real when they are predicates of judgments made by man concerning the world which his experience is to betoken. Values are valid, therefore, only to the extent that they are faithful to reality as a whole and to the extent that there are really selves in whose consciousness values can come to recognition and expression. Stated in another way, the twofold problem of the legitimacy of values comprises the question as to whether or not the cosmos supports them and the question as to whether or not the human self is a being in which ideals can actually manifest themselves. The first question deals with the ultimate success of values. The second question pertains to the substantiation of personality in the world. These two queries are the paramount issues of the religious attitude. In the next chapter, in our treatment of evil, we consider the problem as to whether or not values will prevail. In the second chapter following, in our discussion of God, we examine the basic support for the notion of personality. For the present, let us note in more detail the axiological motive of religion, and the concepts regarding man and God which result because of this axiological interest.

A. Religion as an Axiological Pursuit

Religion welcomes empirical information concerning God, man, and society, but it contends that inductive science must be supplemented with intuitive sentiment, if a truly philosophical conception of reality is to be attained. To inquire concerning the future of religion is, in the last analysis, to ask regarding the validity and perpetuity of faith. Religion will continue to thrive, not in spite of romantic beliefs, but by virtue of them. Those who foretell the early demise of religion misunderstand the fundamental purpose of the religious reactions in man's nature. They consider religious thought to be a primitive sort of science to explain and control baffling situations in the environment, or they interpret it to be a prereflective type of ethical theory, prescribing restrictive rules for human behavior. If these two notions were correct, religion would eventually disappear for lack of a function. For, to the sciences, physical and social, we must frankly look for practical solutions to our material and moral difficulties. In religion we learn to contemplate rather than to control. Science discloses the world as factual; religion seeks to show it friendly.

Religion's concern to reveal the world as personal is not significant of an inclination to fear facts, but of an aspiration to face facts. To the civilized mind, religion has emerged to overcome the partiality of a purely scientific theory of knowledge and nature. Religion is the fulfillment of an intellectual approach which has been more concerned with logic than with life. The belief of the religious soul that the natural and the normative are one is not a fanciful faith, concocted to solace a timorous spirit, but the intellectual product of a persistent search after truth in its ultimate totality. God, freedom, and immortality are not fictions, created to satisfy wishes and longings, but concepts which pertain to actual aspects of reality. They represent the features of value in the world; they are the categories by which the meaning and worth of things are indicated; without them no interpretation of the universe is truly complete. To science, the cosmos is a materialistic machine; to religion, it is a motivating mind; to philosophy, it is both. Our confidence in the progress of religion arises out of a philosophical conviction that the more fully man investigates the truth of things, the more certainly he realizes that reality and ideality coincide.

Now what are some of the notions which religion, as sentimental faith, insists are as important as the instances of scientific fact?

B. Fundamental Concepts of Religion

The characteristics which we venture to ascribe to a religious situation which has axiological import are: (1) A speculative conclusion that the realm of observable, physical data and the domain of introspective, psychical phenomena are dependent for their existence and continuance upon the purposes and powers of an ultimate reality, which is usually known as God. (2) A personal relationship between human individuals and this fundamental, transcendent being. In the unitive experience, whether attained through intellectual, esthetic, or ethical endeavor, man is apprised, as during no other period of consciousness, of the meaning and value of cosmical and human events. (3) A conviction that finite personality no less than the selfhood of deity, implies the actuality of a creative and immortal Soul. Religion insists that the human individual is not wholly explainable in terms of the naturalistic concepts of heredity and environment, as it similarly asserts that mechanistic views of the universe are partial and inadequate. (4) The organization and sustentation of a social community in which the personal values, attained in the spiritual intercourse between God and man, are conserved for and extended to the largest possible number of human beings. In other words, the religious process produces a community, generally called the church, in which the beneficiaries of religion share and propagate their delights and duties. Summed up, these four criteria, which we submit as the essentials of religion, become the twofold conviction, suggested above, that man must win over evil and that the victory is significant of the reality of God. To the next two chapters we turn for an elaboration of this dual requirement of religious theory.

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Chapter XIX

THE STATUS OF EVIL IN THE UNIVERSE

IS THIS a good world in which our life is caught up? Is it a bad world? Or is it neutral—neither good nor bad? These questions, propounded often with deepest feeling and emotion by the earliest poets and sages, grew out of man's struggles with a not too friendly environment—his effort to maintain existence against the seemingly cruel and relentless forces of nature.

I. Historical Views of the Problem of Evil

To peoples on the lowest levels of culture the existence of *evil in general* constitutes no special problem. Primitive man recognizes *particular evils* in his surroundings thwarting his will and purpose, and these he seeks either to evade or overcome. His earliest interpretations of these opposing forces are in terms of animism; they are evil spirits. Both the ''goods'' and evils of life have their origin in the spirit world. The good is the work of benevolent beings and the evil the work of malignant beings. It was natural that the forces of nature in the midst of which man found himself should be personified and ethical qualities be ascribed to them. Man experienced in his own life urgent wants and desires, will and purpose, and he spontaneously read these into the objects and events outside of his own person.

Between primitive man's animistic account of evil and the civilized man's reflective theology and philosophy, there were many steps and stages of interpretation. The most important of these, perhaps, is the theogonies of peoples in the early state of civilization. This is the period of legend and myth, or the age of poetry and drama. Among the Greeks evil is sometimes ascribed to the will of the gods—it may be the work of Zeus (Homer, Pindar, Sophocles, Euripides); sometimes it is represented as in part due to the gods and in part to the sin of man (Homer and Cleanthes); sometimes it is represented as a divinely ordained discipline for the improvement of man (Simonides and Sophocles). Sometimes a dualistic explanation is offered, a part of evil being due to a malevolent and a part due to a benevolent being (Empedocles, Plato, and Anaxagoras). Others, for example, the Stoics, teach that the world is good and that evil, such as is found, is due to man's faulty interpretation of his own experience in the world. In a similar way the ancient Hebrews sometimes regard Jehovah as the author of both good and evil, just as he is the author of light and darkness. Again Jehovah is represented as sending evil for man's correction and chastisement. It may be due, as in the Genesis account, to man's sin and its consequences; or it may be a means which Jehovah uses to test the integrity of man's character. Among the Persians Zoroaster taught that the world is an arena in which two spiritual world powers, one good (Ahura-Mazda) and the other evil (Ahriman), are contending for supremacy. A later Persian, Omar Khayyám, proposed that the riddle of life's meaning could not be solved and that man should forget his idle dreaming about the true and the false, the good and the bad, in the sensuous delights of the fruit of the vine. Solutions similar to these were proposed by the sages of ancient India.

With the growth of reflection and the observation of order and causal connection among the objects, events, and processes of nature—in short, with the development of modern science—invention and discovery and the appearance of the idea of a world system and a social order, inquiry into the meaning of evil in the physical and social realms began. The scientific view of nature had effected a change in the way thoughtful men came to regard evil, but the rôle of evil in the affairs of the world could not be ignored by the philosopher who would give a complete and scientific world view. Man's deepened understanding and increased control of the elements and forces of the physical world have banished the ancient fear and dread and in their place put knowledge and confidence. The very forces of nature which once were feared and worshiped are now harnessed to do man's work. By the exercise of reflection, man may protect himself against flood and fire, heat and cold, disease and starvation. The biological sciences have brought the plant and animal kingdoms largely within man's control. Medicine and surgery are offering an almost miraculous relief from pain, disease, and premature death. The ancients, thrilled with fear and awe, viewed evil contemplatively; it was a great mystery. The modern man, equipped with the devices of modern science and a cultural tradition built up through centuries of intellectual labor, sees in the world many evils, but they are not things to be wondered at merely; they are conditions and circumstances to be met with intelligence and will, and overcome.

The impact of science and learning upon the modern mind places the problem of evil in a different setting. But a problem remains nevertheless, and it is an extremely difficult one for religion and philosophy. There is no more baffling question in all the wide field of human experience. The problem is particularly acute and perplexing for those philosophies which are theistic or teleological, or both. Just in proportion as God is regarded as the spiritual world ground, the disposer and determiner of all, and at the same time is held to be all-wise, all-powerful, and all-righteous, to that extent does the meaning of evil in the world become more puzzling. To the extent that the world is regarded as rational, an orderly whole, a purposive and end-realizing process, to that degree is evil an enigma. Only by those who take ultimate reality to be in some sense spiritual and purposive, only by those who see in the drift of cosmic events "one far-off divine event to which the whole creation moves," can complaint be made against the world as it is. Job saw this and, in the anxiety of his soul's quest for a solution to the vexing question of evil, cried out: "Oh that I knew where I might find him (God)! That I might come even to his seat! I would set my cause in order before him and fill my mouth with arguments. I would know the words which he would answer me, and understand what he would say unto me."[1]

It thus appears that the theist faces a dilemma. He seems forced to make a choice between taking his God as all-wise, all-powerful, and all-righteous and in consequence regarding evil as an error and delusion of finite judgment; or taking his God as finite and limited (which may be no God at all) and in consequence recognizing evil as equally basic and ultimate with the good in the nature of the universe. Choice of the first horn of the dilemma makes God real, significant, and effective, but it seems to make evil unreal, an appearance merely and in the end illusory. Acceptance of the second horn makes of God not a God at all and introduces into the structure of the world a recalcitrant element (perhaps a Devil), one which may triumph over the good. The teleologist too, even though he be not a theist, must reckon with evil as a dysteleological aspect of nature. For example, Arthur Schopenhauer, the archpessimist of Western civilization, insists that the evil in the world far outweighs the good; yet his world view is teleological. The evil of craving, want, and desire drives man into such human associations as the family, the state, and the church; it is at the root of science and the fine arts. Thus evil serves a purpose, though it be the malevolent purpose of a diabolical cosmic will. For the mechanist in cosmology or the materialist in metaphysics the problem of evil logically could never arise. Only in a cosmology which takes values seriously could the cosmic meaning of good and evil have any true intellectual interest. Only where truth, beauty, and goodness are accepted as objectively real and as *mingled* with the ultimate stuff of things, could there be a philosophical problem of evil.

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[1] Job 23: 3–5.

Our treatment of the problem of evil will be an attempt to relate both good and evil to the constitution of the world, to its structure, and to its practical operation. In this connection we shall have occasion to develop further certain issues raised in the chapter on "The Problem of Cosmical Mechanism and Teleology," and shall anticipate points of view supported in the following chapter on the problem of God. With the problem of evil in its cosmic scope we must now wrestle. Before we conclude, occasion will be found to examine the three typical emotional attitudes taken to the problem of evil: namely, *pessimism, optimism,* and *meliorism.*

II. The Kinds of Evil

There is no uniformity among philosophers in naming and classifying the evils or anti-values of the world. A complete classification probably would require us to make four groups: namely, *pain, error, ugliness,* and *sin.* Directly opposite these evils we may place the four great values or "goods": *happiness, truth, beauty,* and *goodness,* which might be expected to prevail in a divinely ordered and supremely good world. Most discussions of the problem of evil limit themselves to physical or natural evil (pain or suffering) and moral evil (sin). We shall take the usual course and confine our discussion to natural and moral evil chiefly, though we grant that an exhaustive account should reckon with error and ugliness also. Two things certainly will be apparent to anyone who inquires deeply into the evils of the world: First, that the different evils, so far as their causes and effects are concerned, are interrelated. For example, ignorance and error in judgment are frequently the cause of pain, ugliness, and sin.

Likewise pain and disease may prepare the way for ugliness, error, and sin. Who is able to trace out the subtle ways in which the evils of life interpenetrate and overlap! Secondly, the methods and principles which serve to account philosophically for one type of evil will hold in the main for other types of evil.

A. Natural Evil

By natural or physical evil is meant such anti-values as bodily pain, disease, death, and large-scale physical catastrophes such as earthquakes, floods, fires, famines, pestilences, and wars. All living creatures with sensibility on this planet, all men and animals (it may be plants also) suffer untold pain of body and anxiety of mind from the merciless ways of nature.

Space permits here only a suggestion of the wide gamut of ills to which living things are subject. Let us look at the darkest side of the picture. In the animal world the hard struggle for existence makes one animal species prey upon another. The bloody battle for life often ends in the triumph of one species and the extinction of another, this species later to be decimated, if not entirely killed off, by another. Tennyson's indictment of nature as ''red in tooth and claw with ravin'' seems to represent one side of the scene. Not only must every animal guard itself with watchfulness against its animal and plant foes, it must wage its unceasing warfare against disease, it must cope with extremes of heat and cold, it must suffer often unto death for want of food. Weakened by the unfriendly elements of nature, it falls at last before its more favored enemies. The cruel sufferings inflicted by nature upon its innocent animal creatures are brilliantly depicted by the English naturalist of the nineteenth century, Romanes. He says: ''We find that more than one-half of the species which have survived the ceaseless struggle are parasitic in their habits, lower and insentient forms of life feasting on higher and sentient forms, we find teeth and talons whetted for slaughter, hooks and suckers moulded for torture—everywhere a reign of terror, hunger, sickness, with oozing blood and quivering limbs, with gasping breath and eyes of innocence that dimly close in deaths of cruel torture.'' The cruel blindness and stupidity of nature has seldom been drawn in stronger terms than by John Stuart Mill: ''In sober truth,'' he says, ''nearly all of the things for which men are hanged or imprisoned for doing to one another, are Nature's everyday performances. Killing, the most criminal act recognized by human laws, Nature does once to every being that lives. . . . Next to taking life . . . is taking the means by which we live; and Nature does this on the largest scale and with the most callous indifference. A single hurricane destroys the hopes of a season; a flight of locusts or an inundation desolates a district; a trifling chemical change in an edible root starves a million people.''[2]

So much for the animal world. What of the human order? To those who see it at its worst the lot of man is not one whit better than for the animals. In some respects the animal is more favored than man. A crab, for example, on losing a limb will grow another, and a snail will repair even the loss of a head. Man, however, is an animal, only more richly endowed with intelligence and power, and he applies his superior ability to the destruction of animal life for food and raiment. Again, the well-being of some living things means the untimely death of others. However, man is more than an animal. He possesses the same instincts, passions, appetites and cravings, but in such a psychophysical setting as to enable him to develop a richer and more meaningful life of feeling, thought, and will. If nature gives to man instincts and capacities which under favorable conditions enable him to develop social institutions with all of their emotional and intellectual flavor and value, nature at the same time gives to man keener sensibility to pain and loss. The animal's lower sensibility to pleasure and pain saves it from much agony and distress. With his power of memory, imagination, anticipation, and reflection, man lives in a larger and more varied world. Man's greater capacity for mind, cultural life, and values opens to him a more varied happiness, intenser joys, and a deeper contentment of spirit; but it also opens the door to their opposites—not only to intenser physical pain, but to a mental anguish more acute and enduring. To the animal there can be no lasting sense of loss, no regret, no remorse; there can be no protracted pulling of heartstrings because of the prolonged suffering and distress of those close by family ties; there can be no sense of bereavement, no burdening weight of anxiety for those afflicted with imbecility, idiocy, or insanity. These experiences are reserved for man with his heightened capacity for happiness and sorrow.

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[2] ''Three Essays on Religion,'' pp. 28, 30. (Longmans, Green & Co., 1885.)

Sometimes nature goes in for wholesale destruction of animal and human life. Suddenly and without warning a whole city will be enveloped with fire, or, it may be, a tidal wave will carry the inhabitants of several cities down to a watery grave. The lava from an erupting volcano, the crumpling of buildings by earthquake, the raging fury of a tornado, the slower but more frequent ravages of some malignant disease may bear their thousands to a torturing death. What good can such calamities be in the world? And the frequency of their occurrence, the extent of their destructiveness—do they not show that pain and suffering far exceed the pleasure and happiness in the world?

The problem of natural evil is further complicated by the lack of method in its distribution. Natural evils seem not to take place on any plan of equality or merit. Certainly among men natural evils in the form of pain, suffering, and loss are not dealt out on a basis of justice. Who has not "seen the wicked in great power, and spreading himself like a green bay tree," while the righteous were afflicted and oppressed, enduring defeat and privation! Many good and useful lives are cut off in their prime, and many promising children are taken away before they have had time to realize their powers. The strong and vigorous are often snatched away by accident and disease, while the weak and decrepit are left in their wretchedness. A devoted mother with a family of dependent children is forced to leave her husband and heartbroken family. What justice here? What economy and order in nature when such cruelties are of daily occurrence? Can a world in which such tragedies occur be called good and purposeful? Before we attempt any answer to the questions raised by natural evil, let us look at the moral evils of the world.

B. Moral Evil

If natural evil is bad, certainly moral evil is worse and more destructive of human life and value. Take the front page of any daily newspaper as a portrayal of human suffering, loss, and iniquity. Murder and theft, vice and crime, graft and exploitation, injustice and cruelty, jealousy and hate, domestic tangles and divorce, bribery and adulteration of foods, the oppression of the weak and ignorant, smuggling and bootlegging, intemperance and drunkenness, gambling and prostitution, unearned luxury and extravagant spending—these are but a few of the types of evil which exist in society. Every institution and area of our social life has its perversions and irregularities—the home, the school, the church, business, industry, and government, whether in city, village, or countryside.

Moral evil is closely related to natural evil because the latter furnishes the occasion of the former. Hunger, want, pain, and suffering incite men to crime. Man's natural instincts and impulses, rooted without doubt in the original driving forces of the cosmos, make society possible, but they also provide the basis on which every conceivable form of vice and evil thrives. These instincts and impulses are the possibility for every twisted and distorted individual, whether in youth, middle life, or old age. They are the driving urge behind every social perversity from the domestic infelicity of the home to the holocaust of international warfare. Human life by necessity seeks adjustment to its surroundings, but change in the physical and social realms often outruns man's success in adaptation. The manner in which natural evil and moral evil overlap and interplay was never stated with more force and vividness than by the brilliant German philosopher of the nineteenth century, Arthur Schopenhauer. For a final statement of the enormity and extent of evil we now turn to the lurid picture painted by the archpessimist of Western civilization.

Schopenhauer finds that evil is rooted in the nature of reality; it is the essence and substance of things, and this world, in consequence, is the worst of all possible worlds. Kant has taught him that Will is the ultimate cause of things. From this he infers that all matter, all life, and all mind—everything is a manifestation and expression of a cosmic Will. From the philosophy of ancient India the temperamental Schopenhauer borrows another element for his philosophy. Gautama Buddha taught that will is desire, that insatiable desire is the cause of existence, and that all existence involves suffering. Thus Schopenhauer says: "All living is striving, all striving is suffering, therefore all living is suffering."

In the stone and all inanimate matter Will manifests itself as blind force; in the plant and the vegetable kingdom Will appears as unconscious striving for something, it knows not what; in the animal what was yet unconscious in the plant comes to dim consciousness of sensibility and feeling and purpose, but here Will is yet on the plane of instinct and impulse; in man Will comes to self-consciousness and purpose. Schopenhauer would have us see that on each higher plane of being Will has fashioned for itself finer and keener instruments for experiencing and inflicting pain. Will puts the thorns on the rose and deadly poison in the reptile. But what are plants, in capacity to experience and inflict pain, as compared with animals? The wild beast with its sharp claws and powerful jaw, the serpent with its poisonous fangs, the microscopic but infectious germ—these, as products of the Will, are finer instruments for producing suffering. In the human brain, with all its power of intelligence and feeling, the cosmic Will reaches its culmination. On the human plane and in the institutions of society—the family, the state, the church, industry, and the fine arts—Will produces not only its most ingenious creations; it has created in these institutions and in the relations incident thereto the most refined devices for multiplying desire and hence for inflicting pain.

III. Philosophical Attitudes toward Evil

The words *pessimism, optimism,* and *meliorism* are descriptive of attitudes of mind to the proportion of good and evil in the world and to man's prospect in the universe. Taken in their best sense, they represent the reaction of the whole self or personality to man's fortune in a world constituted of the mingled elements of good and evil. Taken at their worst—and it is doubtful whether gloomy pessimism or simon-pure optimism has ever represented conviction based upon sober reflection—they reflect peculiarities of temperament, unusual conditions of the physical and social environment, or hasty and immature consideration of the facts of experience.

A. Pessimism

Pessimism as a philosophy teaches that life is essentially evil, that the world is constituted on fundamentally wrong principles, and that in consequence there is more pain than pleasure in life, more evil than good in the world. In its most extreme temperamental form, it may rejoice in the discovery of misery and try to minimize or even decry whatever happiness may be found. "I rejoice to discover more and more the misery of men and things," says Leopardi, "to touch them with the hand and to be seized with a cold shudder as I search through the unblessed and terrible secret of life."[3] A more subjective form of the same state of mind is expressed in the words: It makes me feel bad to feel good because I know it won't last.

Pessimism is very old, as old as the religious philosophies of ancient India and the ancient Hebrews.[4] In the history of mankind pessimism appears in different degrees and under differing conditions and circumstances. It may reflect the hard demands of life in a densely populated country with a hot climate, as in India; it may arise out of the disillusionment and the inevitable boredom which comes to those who, having pursued pleasure and material values only, find no enduring satisfaction in life, as was the case in King Solomon's reign, pictured in "Ecclesiastes"; it may be wholly or partly due to unfavorable economic, political, religious, and moral conditions, as was true in Schopenhauer's case; it may be due to a pathological nervous condition and the melancholy disposition incident thereto, which was also the case of Schopenhauer; it may be due to a defective liver, a chronically disordered digestive system, or the failure of the endocrine glands, as is true in the case of many commonplace pessimists; it may be a temporary affliction of adolescent youth in college or university life, who having found no outlet for their energy, enthusiasm, and idealism, and being impatient with the success of their elders in reshaping and reforming the world, conclude that the game of life is not worth the candle; or, lastly, it may be due to the disillusionment which comes to those who try to fill life with unearned joys, who, having wealth and all the physical comforts of life without labor and sacrifice, have entered upon no vocation, identified themselves with no cause, expressed themselves in no creative labor which stimulates self-forgetfulness. Arthur Schopenhauer and Eduard von Hartmann have given pessimism a metaphysical foundation and we shall examine their arguments below.

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[3] Taken from James Ward, "Realm of Ends," p. 320 (G. P. Putnam's Sons, 1912), who quotes from Sully, "Pessimism," 3rd ed., 1892, p. 27.

[4] *Cf.* Buddhism and "Ecclesiastes."

The following passages from Schopenhauer may be regarded as some of the strongest and severest expressions of pessimism to be found in the literature of Western civilization:

> If we look at it [man's life] from the physical side, it is clear that our walking is admittedly merely constant prevented falling, the life of our body is only a constantly prevented dying, and ever postponed death: finally in the same way the activity of our mind is constantly deferred ennui. Every breath we draw wards off death that is constantly intruding upon us. In this way we fight with it every moment, and again, at longer intervals through every meal we eat, every sleep we take, every time we warm ourselves, etc. In the end death must conquer, for we become subject to him through birth, and he only plays for a little while with his prey before he swallows it up. . . .
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> We saw that the inner being of unconscious nature is a constant striving without end and without rest. And this appears to us much more distinctly when we consider the nature of brutes and man. Willing and striving is its whole being, which may be very well compared to an unquenchable thirst. But the basis of all willing is need, deficiency, and thus pain. Consequently, the nature of brutes and man is subject to pain originally and through its very being. If, on the other hand, it lacks objects of desire, because it is at once deprived of them by a too easy satisfaction, a terrible void and ennui comes over it, that is, its being and existence itself becomes an unbearable burden to it. Thus life swings like a pendulum backwards and forwards between pain and ennui. This has also had to express itself very oddly in this way; after man had transferred all pain and torment to hell, then there remained nothing over for heaven but ennui. . . .
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> . . . Man, as the most complete objectification of that will is in like manner also the most necessitous of all beings; he is through and through concrete willing and needing; he is a concretion of a thousand necessities. With these he stands upon the

> earth, left to himself, uncertain about everything except his own need and misery. Consequently the care for the maintenance of that existence under exacting demands, which are renewed every day, occupies, as a rule, the whole of human life. To this is directly related the second claim, that of the propagation of the species. At the same time he is threatened from a thousand sides by the most different kinds of dangers, from which it requires constant watchfulness to escape. With cautious steps and casting anxious glances round him he pursues his path, for a thousand accidents and a thousand enemies lie in wait for him. Thus he went while a savage, thus he goes in civilized life; there is no security for him. . . .
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> Now it is well worth observing that, on the one hand, the suffering and misery of life may easily increase to such an extent that death itself, in the flight from which the whole of life consists, becomes desirable, and we hasten towards it voluntarily; and again, on the other hand, that as soon as want and suffering permit rest to a man, ennui is at once so near that he necessarily requires diversion. The striving after existence is what occupies all living things and maintains them in motion. . . . Ennui is by no means an evil to be lightly esteemed; in the end it depicts on the countenance real despair. It makes beings who love each other so little as men do, seek each other eagerly, and thus becomes the source of social intercourse. . . . But whatever nature and fortune may have done, whoever a man may be and whatever he may possess, the pain which is essential to life cannot be thrown off. . . . The ceaseless efforts to banish suffering accomplish no more than to make it change its form.[5]

Eduard von Hartmann (1842–1906), a disciple of Schopenhauer, develops his arguments for the universal extent of evil by an inductive, scientific method. The causal and directing principle in things—matter, life and mind—is an unconscious, impersonal, but intelligent Will. As in Schopenhauer's philosophy, the manifestation of this Unconscious Will in all existence results in an excess of pain and suffering over pleasure and happiness. The development of self-consciousness, memory, imagination, and sympathy in man only increases his capacity to experience pain and inflict suffering. Von Hartmann's cosmology involves a duality of elements—an Unconscious Will from which all existence has sprung, and an Unconscious Intelligence which is striving to undo the evil wrought by Will. There is a rational element (the Absolute of Hegel) in nature as well as an irrational principle (the Will of Schopenhauer). What Von Hartmann really tries to do is to effect a synthesis of the logical element in Hegel with the voluntaristic element of Schopenhauer. Thus for Von Hartmann the Unconscious is constituted out of the irrational Will and the rational activity of ideation, and there is no assurance that either will triumph. This is, in fact, the best of all possible worlds, but even so it is still so bad that it would have been better had there been no world at all.[6]

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[5] Benjamin Rand, "The Classical Moralists," pp. 611–612, 613, 614, 615. (By permission of, and by arrangement with, Houghton Mifflin Co.)

As Von Hartmann looks at the world, man is in a predicament; he is caught between two forces: the rational and the irrational. In fact these forces meet in his own nature. However, since the universe has a good end which the rational element is seeking to realize, Von Hartmann recommends that this end of intelligence be made our end also. The evil and suffering of life, he contends, far exceed the good and happiness. But, unlike Schopenhauer, he does not advise suicide as a way out for man. The irrational Will might create a multiplicity of other individuals with still greater capacity for pain. Only when the rational element in nature triumphs over the irrational, will good triumph over evil. Accordingly it behooves all living things, and especially man, in whom will and intelligence have come to self-consciousness, to assert the will to live and postpone indefinitely the cowardly surrender to the irrational element. It is possible that sometime in the future the universe shall have consumed its energies in accordance with the second law of thermodynamics, and that this will put an end to all animate existence. Meanwhile the best that man can do is to use his intelligence in seeing through the illusions by which the irrational element in nature coaxes him on to greater suffering and deeper unhappiness. From one point of view Von Hartmann holds out a ray of hope to man in his miserable plight; from another point of view his pessimism is more complete than Schopenhauer's.

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[6] See Von Hartmann, ''Philosophy of the Unconscious,'' translated by Coupland, 1886.

B. OPTIMISM

Optimism in its extreme form is just the antithesis of pessimism. As a philosophy optimism holds that there is in the world a balance of pleasure over pain, of happiness over sorrow, of good over evil. That there are evils in the world the optimist does not deny, but he insists that the world is so constituted as to leave no doubt of the final triumph of the good; in the words of Browning's Pippa, "God's in his heaven—all's right with the world."

Now optimism, like pessimism, exists in different degrees and arises out of different circumstances. It may be superficial and temperamental, or it may be the reasoned conclusion of one who thinking inductively or deductively stays at a safe distance from the concrete, particular evils of life. Doubtless free-and-easy optimism may be explained as due to the ill-functioning of ductless glands, to a sluggish corpulency, or to the blissful ignorance of nature's ways and the harried life of man in an industrial civilization. On the other hand the optimist may have his eyes on the social world, upon the progress of man in controlling and harnessing the forces of nature, upon man's success in domesticating plants and animals, upon the elevation of his own cultural standing by science and education. Man is in better position to-day than ever before in respect to health, physical comforts, and moral, political, economic, and religious life. In short, he is happier and the outlook for the future is one of unlimited development. Such reasoning is inductive and is well illustrated in Sir John Lubbock's book, "The Pleasures of Life," where reason is advanced not only for "The Duty of Happiness" and "The Happiness of Duty," but for the happiness to be found in nature, travel, science, books, health, wealth, friends, home, music, poetry, painting, and religion.

Or the optimist's procedure may be preëminently deductive. Believing that the existence of God can be fully proved and that the character of the world can be inferred from the character of its creator, the optimist may go on to the conclusion that this is the best of all possible worlds, as in the case of Leibnitz. Or, again, accepting a pantheistic monism in ontology, a view which, if self-consistent, finds no room in the world of reality for evil because *God is all and all is God.* The religious movement known as Christian Science, founded by Mary Baker Eddy about 1866, teaches the unreality of evil. After the manner of most philosophical mysticisms Christian Science conceives of God as an Absolute Mind or Spirit whose goodness excludes the reality not only of evil, but of matter, disease, and death also. To believe in the reality of these things is to accept the delusions of ignorance and false thinking.[7] The conclusion is reached that reality in its unity and completeness is above good and evil. Thus good and evil are taken as the categories of the finite and limited; they apply only to the part but disappear from the standpoint of the whole. Evil from this standpoint is due to privation, defect, or to narrowness of perspective in those who behold it; from the higher point of view it is non-existent. As St. Augustine has it, all that exists and is real is good; evil is non-existence,[8] illusion, and negativity. Spinoza and certain absolute idealists teach that what seems evil from the limited standpoint of the finite is in fact only "good in the making" when viewed *sub specie æternitatis.*

In the theodicy of Leibnitz we have the optimistic theory of one who regards this as the best of all possible worlds.

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[7] See the following books by Mary Baker Eddy: "Science and Health, with Key to the Scriptures," "Unity of Good," and "No and Yes."

[8] *Cf.* Plato and Plotinus.

A *theodicy* attempts to vindicate the justice and wisdom of God in permitting natural and moral evil. The cosmology which finds the dysteleological features in the world predominant over the teleological has been met in the history of philosophy in one or both of two ways: (1) either the dysteleological features have been denied or shown to be overcome by the good elements; or (2) the dysteleological features have been shown to be *indispensable means* or *attendant results* in the purposeful working out of the whole. Sometimes, as in the case of the ancient Stoics and in absolute idealism, these approaches or solutions have been combined.

The most conspicuous instance of a theodicy in modern philosophy is the ''Essais de Théodicée'' (1710), by Leibnitz. He gave to the world a new conception of matter under the concept *monad.* This he defined as a center of force, psychical in nature. His metaphysics thus conceived of the world as made up of a multiplicity of monads varying in degree of mentality or sentiency, grounded and sustained in the creative and unifying monad, God. The theodicy of this mathematician and physicist is developed upon the basis of his monadology. His reasoning may be summarized as follows: A world of perfect beings or things would not be a *world* at all; the finite must of necessity be limited and imperfect. God could not create without giving things limitations and impediments. These limitations constitute the basis of metaphysical or natural evils. The monads on the human plane being finite and imperfect, have confused and obscure ideas and in consequence are led into error and sin. Thus out of metaphysical evil comes moral evil, and out of moral evil, in turn, come pain and sorrow. Evil therefore follows from the very idea of the created, from the very idea of a world. Now an infinite number of worlds is possible, each having some evil in it, or at least the possibility of evil, but some containing more than others. Since God is absolutely good and wise, we may be sure that he chose to create a world with the evils as few and as light as possible. Certainly an all-wise and righteous God would be guided in his creative activity by the idea of the best. (Plato uses the same argument.) God's will would gladly have created a world free of evil, but his wisdom (knowledge of the possible) permitted him to create only the best of all possible worlds. God might have created man an automaton, but in his wisdom it seemed better to create him with capacity for free choice and self-determination, knowing, of course, that with this would go the possibility and probability of mistakes and sin. When God made freedom possible, in the same act the door to evil was opened. Nevertheless, pain and suffering serve to test man's character, they toughen the moral fiber, they discipline the soul. As in the view of St. Augustine, good is not evil, but it is good that evil is. Briefly: (1) This is the best of all possible worlds. (2) Evil is a necessary condition or accompaniment of the finite and imperfect. (3) Evil, such as exists, serves as a foil and setting to goodness and beauty. (4) Evil works as a spur to the achievement of goodness.

C. MELIORISM

Meliorism is a *via media* between pessimism and optimism. The meliorist sees all the evils which the pessimist sees, but he is not unappreciative of the confidence and hope of the optimist. He is convinced, however, that both pessimists and optimists have read something of their own subjective humors into the pictures they have painted. In consequence both are right and both are wrong, and a true view will have to take account of the truth in these extreme positions.

William James, with his pragmatic and objective attitude to problems, has given one of the best statements to meliorism. For the meliorist the world is in evolution. Individualities and novelties in the physical, biological, and social realms are being constantly introduced through time. Time and change are real. Everywhere nature is bursting with new life and strange creations. Moreover, it is a multiverse and not a universe, in which we live. The world of the real is made of many things qualitatively and quantitatively. In the midst of this manifold (probably) is a finite ordering and creating God striving to realize harmony. Man's privilege and duty, religiously and ethically conceived, is to coöperate with this finite God in creating and developing a world of order and harmony.

The outcome of the cosmic struggle between good and evil, right and wrong, order and chaos, is not predetermined or foreordained. The final issue awaits the decisions of man and the work of the organizing forces of nature. "The universe, in a word, is tychistic," says Kallen. "Chance is real in it. Destruction is as possible as salvation, and evil is as actual as good. What is central is that evil and good are *relations,* and not substances, that each entity which struggles can of itself and in its own right contribute to the everlasting damnation or eternal salvation of the world. There is no eternal law; there is no overarching destiny, no all-compelling Providence. Law itself is no more than cosmic habit, a *modus vivendi,* which things that have come together by chance, and are staying together by choice, have worked out as men work out communal customs facilitating contacts."[9]

Or as William James, the champion of meliorism, himself says:

> Finally, if the melioristic universe were *really* here, it would require the active good will of all of us, in the way of belief as well as of our other activities, to bring it to a prosperous issue.
>
> The melioristic universe is conceived after a *social* analogy, as a pluralism of independent powers. It will succeed just in proportion as more of these work for its success. If none work, it will fail. If each does its best, it will not fail. Its destiny thus hangs on an *if,* or on a lot of *ifs*—which amounts to saying (in the technical language of logic) that, the world being as yet unfinished, its

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[9] H. M. Kallen, "William James and Henri Bergson" (1914), pp. 182, 183. (Reprinted by permission of the University of Chicago Press.)

total character can be expressed only by *hypothetical* and not by categorical propositions. . . .

As individual members of a pluralistic universe, we must recognize that, even though we do *our* best, the other factors also will have a voice in the result. If they refuse to conspire, our good will and labor may be thrown away.[10]

IV. Philosophical Solutions of the Problem of Evil

Having accepted a theistic and teleological world view, not as demonstrable but as the most plausible hypothesis, we stand to show how, in some sense at least, the presence of evil in the world is not incompatible with such a theory. Let it be acknowledged at once that no *complete* solution of the problem of evil is in sight. ''There is a veil past which we cannot see.'' The finite mind with its limited grasp of existence cannot yet comprehend the full significance of either good or evil. Yet, granting on evidence soon to be offered that an immanent, transcendent, creating and ordering God exists, we may conclude that the term *good* is more applicable to the world than the term *evil.* Moreover, the world is growing better. At any rate so we shall reason. No world view is capable of proof. The immature state of the physical and social sciences and the imperfection in man's apprehension of the realm of the spirit, preclude any statement of certainty in these matters. Certainty with abounding subjective conviction has been attained in the past. But the evidence on which it was based was not objective nor empirically verifiable. Indeed it is doubtful if certainty of a socially objective sort shall ever be attained. In a sense we walk by faith and not by sight. The most that can be hoped for is such an interpretation of good and evil as will accord with man's fullest knowledge. In the considerations which follow, some light, we hope, is thrown upon the place of evil in a theistic and purposive world.[11]

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[10] ''Some Problems of Philosophy,'' pp. 228–229. (Longmans, Green and Co., 1911.)

[11] See J. A. Leighton, ''Man and the Cosmos,'' Ch. XXXVIII. (D. Appleton and Co., 1922.)

A. Evil Not a Cosmic Principle

Evil is not a cosmic principle coördinate with the good or ordering principle. There are at least two historical solutions of the problem of evil which seem wholly inadequate to a cool and impartial treatment of the facts. Both of them err in elevating evil to the dignity of a cosmic principle.

1. The philosophical pessimism of ancient India, represented in Brahmanism and Buddhism, taught that all existence is evil. Reality has its source in a neuter, impersonal Being (Brahma or Atman) which in some unknown way (perhaps through emanation) willed the world and all life into existence. Brahma is the source and goal of all that is. A vast interval separates the source and goal, and between them the wheel of existence turns. All things, including man and animals, are born and reborn sometimes on a higher and sometimes on a lower plane. Every living creature suffers changes innumerable, pain and distress, until at last, *perhaps*, rest may come through return to Nirvana, the state of reabsorption into the divine. Action, striving, willing, and aspiring only increase the number of rebirths; they may even occasion rebirth on a lower plane. Thus all existence is evil, for a good deed or wish is only a lesser evil because it maintains the soul in existence.

2. The other solution, though less extreme in the prominence which it gives to evil, yet regards evil as a cosmic principle coördinate with the good. Zoroaster, founder of the religion which bears his name, taught a doctrine of cosmological dualism; namely, the existence of a God who is the power of light, life, truth, and goodness; and a Devil, the author and source of all that is evil. These two cosmic powers (Ahura-Mazda, the good, and Ahriman, the evil principle) are regarded as existing from the beginning, though Zoroaster taught that the former power will sometime put an end to the Devil and all his works. Each of

these world powers is believed to have lesser spirits of its own kind joined in the eternal war.

Arthur Schopenhauer's metaphysical pessimism was not unlike the morbid and melancholy Indian world view which inspired it. As already stated, Schopenhauer's world ground is a cosmic Will whose unceasing self-expression amounts to a bottomless abyss of desire and craving which can never be filled. Thus for him this is the worst of all possible worlds. Here, as in the Indian pessimism, evil is elevated to the position of a cosmic element. True, Schopenhauer proposes remedies: (1) negate the will and suppress desire (asceticism); (2) practice sympathy and pity; (3) cultivate self-forgetfulness by pursuing the fine arts and philosophy; and (4) free yourself from desire and the illusoriness of individual existence. But these are palliative merely. Von Hartmann's pessimism, while it was a bit more hopeful because it recognized the presence of a rational element in the world countering the irrational, yet found consolation only in the fact that the rational element might be employed to hasten the triumph of non-existence over existence. Thus again evil is essentially at the core of reality.

Now it would seem that the error of Indian pessimism, as also that of Schopenhauer and Von Hartmann, is that it overstates the case for evil. Indian pessimism has been explained as due to the biological misfortune of the mating of races not adapted to each other, and to the intolerable burden of existence in an overpopulated area with warm climate and shortage of food. The social pessimism abroad in Europe, especially in Germany, in the early nineteenth century is reflected in the gloomy cosmology of Schopenhauer and Von Hartmann. Having fed his mind on the philosophies of the East and being disposed by temperament to look upon the dark side of life, Schopenhauer has given us not a balanced theory of the Will such as was found in Kant and Fichte, not a dispassionate and realistic account of the world, but a temperamental and embittered parody. Zoroaster's dualism is to be explained largely in terms of the physical and social environment of the Persian people in the sixth century B.C.

Pure optimism seems to find its solution in the opposite extreme. Quite willing to reject the metaphysical status of evil, simon-pure optimism practically denies that there is any such thing as evil. Such a view may be theistic, as in a portion of the "Hymn to Zeus" by the Stoic, Cleanthes: "O King, most High, nothing is done without Thee, neither in heaven or on the earth, nor in the sea, except what the wicked do in their foolishness. Thou makest order out of disorder, and what is worthless becomes precious in thy sight; for Thou hast fitted together good and evil into one and hast established one law that exists forever."[12] An early eighteenth century statement of optimism appears in lines from Pope's *"Essay on Man."*

> All are but parts of one stupendous whole,
> Whose body Nature is, and God the soul. . . .
> All nature is but art, unknown to thee;
> All chance, direction, which thou canst not see;
> All discord, harmony not understood;
> All partial evil, universal good;
> And, spite of pride, in erring reason's spite,
> One truth is clear, Whatever is, is right.

Emerson's words from "The Park" are not far from the same conception:

> Yet spake yon purple mountain,
> Yet said yon ancient wood,
> That Night or Day, that Love or Crime,
> Leads all souls to the Good.

Certain exponents of absolute idealism—for example, Hegel, Fichte, Bradley, and Bosanquet—come very close to denying the reality of evil. This way of treating evil is much in favor also among mystics and pantheists.

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[12] Quoted from Wm. DeWitt Hyde, "The Five Great Philosophies of Life," pp. 98–99. (By permission of The Macmillan Co.)

But if the pessimist errs in one direction, the simon-pure optimist errs in another. The prophet Isaiah pronounced his malediction upon both extremes: ''Woe unto them that call evil good and good evil.'' There is, no doubt, truth in the contention of Zoroaster and Plato that there is a stubborn, recalcitrant element in nature. To Henri Bergson and his disciples to-day, matter is a downward tendency. ''For the good that I would I do not; but the evil which I would not, that I do,'' is St. Paul's statement of the eternal conflict between the flesh and the spirit. Thus there does seem to be moral evil in the world. Yet, on the other hand, there seems to be truth in the view of those who, with Shakespeare, say:

> There is some soul of goodness in things evil
> Would men observingly distil it out.[13]
>
> For nought so vile that on the earth doth live
> But to the earth some special good doth give,
> Nor aught so good but strain'd from that fair use
> Revolts from true birth, stumbling on abuse:[14]

Evil seems to be occasioned by the limitation of finitude; it represents immaturity merely; it appears in human experience because of narrow outlook. Just as the ills of life when viewed in the perspective of the whole life take their places as lesser goods, so when the evils of the world are taken in the light of the totality, they also are good. So the optimist reasons.[15]

We would not wish to question the truth in these perspectives. There is truth in pessimism and there is truth in optimism; perhaps the greater truth lies on the side of optimism. But perhaps it is better to hold with L. T. Hobhouse that ''there is no evil principle in the sense that there is a good principle. All evil is traceable to the failure of purpose to coördinate things which so far as uncoördinated act in mutual indifference. Evil is not inherent in the tendencies of elements as such, but depends on the conflicts which they bring about when uncoördinated.''[16] James Ward presents the same view when he asserts that there is ''no principle of evil in the world; and also no *pure* malevolence, no *radikale Böse,* as Kant called it, in the individual. All things in the main and in the long run, he holds, work together for good. Or, to put it otherwise, there is a conservation and a solidarity of the good such as does not exist for evil.'' [17]

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[13] ''Henry V,'' Act IV, Sc. 1.

[14] ''Romeo and Juliet,'' Act II, Sc. 3.

[15] See Bernard Bosanquet, ''Some Suggestions in Ethics,'' Ch. V, ''Doubting the Reality of Evil.'' (The Macmillan Co., 1918.)

B. Evil Incident to a World of Growth

The very conception of an evolving world implies finitude and limitation. And we have found reason (in Chapters X and XI) to believe that change, development, and evolution are true of the world. Though there is a difference of opinion among scientists and philosophers as to how cosmic evolution is to be taken, yet the concept is generally accepted as applicable to the world. But how can change through time be real if perfection and completeness exist from the beginning? If time, change, creativity, and evolution are to be taken seriously, then imperfection and incompleteness are already present. The only alternative seems to be a static and dead universe, or, to use William James's phrase, ''a block universe.'' Thus evil, in one form at least, namely, that of imperfection and limitation, is a necessary condition of a world of growth.

Let it be granted that if God created the world, it would be reasonable to expect that it would be the best possible. But is it necessary or even possible to require of Omnipotence that it should have no limitation, not even the limitation of its own nature? To think of Omnipotence as power to do anything, even the impossible, is indeed the notion of a primitive or childish mind. Its social correlate is the conception of a crude tyrannical being of physical force whose conduct is capricious and arbitrary. Such a view takes no account of power exercised in harmony with moral purpose and a sense of values.[18] To define Omnipotence as power to do both the possible and the impossible is to think the unthinkable; the conception is contradictory and meaningless. All that Omnipotence can mean is power to do what is not intrinsically incompatible with its nature. Moreover, if God is expressing the qualities of his being in the universe, it is not unreasonable to suppose that the foundation principles of the intelligible universe are also the principles and necessities of the divine nature. The nature of God and the laws of his being must be determined in the light of man's experience of God's world.

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[16] L. T. Hobhouse, ''Contemporary British Philosophy,'' First Series (1924), ed. by J. H. Muirhead, p. 186. (By permission of The Macmillan Co., publishers.)

[17] James Ward, ''Realm of Ends,'' pp. 130–131. (G. P. Putnam's Sons, 1912.)

Having seen that evil is an inevitable incident to a world of growth, it remains to point out briefly how some of the world's evils are to be accounted for on these lines. In the first place it may be said that many physical evils follow from the fact that our physical world—the planets, stars, suns—are in the making and unmaking. The present state of the earth with its rich possibilities for life and for human civilization is due in part, if we are to believe astronomers, to natural catastrophes. Glaciers, earthquakes, floods, and winds have their beneficial aspects. Moreover, man through intelligent effort may either anticipate or overcome the destructiveness of nature's forces. Where he cannot harness the crude powers of nature—he is doing this with marvelous success in the case of wind, water, and even the volcano—he can at least protect himself against them. The history of mankind reveals no tendency on the part of man to abdicate permanently those parts of the earth's surface where natural catastrophes occur most frequently. It can even be shown that where life is easy and physical ills are at a minimum humanity tends to degenerate in body, mind, and character. Hardship is the mother of invention. Physical obstacles challenge man to exercise his mental and physical capacities; they stimulate him to personal development.

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[18] Dr. McTaggart in ''Some Dogmas of Religion'' uses twenty pages to show that God is not omnipotent because he cannot overrule the logical laws of identity, contradiction, and excluded middle.

Much of the pain and suffering of the animal and human world may also be explained as incidental to a world of change and growth. Living things pass through life cycles which involve birth, infancy, imperfection, maturation, and, finally, death. Pain and suffering in many instances are merely the condition of larger and richer pleasure. Certainly the pleasures of eating and drinking could not be had without the pains of hunger and thirst. The satisfactions of parenthood could not be enjoyed without the sufferings incident thereto. There is grave danger that human beings magnify the suffering of animals by projecting their own experiences into the animal mind. Let it be allowed that the animal has mind, yet it is not a mind with such a high capacity for memory, imagination, feeling, and will as exists in man. Pain and suffering, in the animal, therefore, are hardly so intense as in human beings. And while there is no way of determining whether for animal or even man there is a balance of pleasure over pain, animal and human life exercise such an instinct for self-preservation and such a will to live as to suggest that life, in spite of its evils, is worth while. Moreover, so far as the human order is concerned, man, by dint of intelligence and purpose, is achieving relief from many of the physical evils which earlier threatened him. We need only suggest that through chemical and physical engineering, through scientific agriculture, medicine, and surgery, through wise methods of education and government, man's lot in the face of physical evils is being alleviated.

But, it may be argued, are there not superfluous evils? Would the world not be better if it contained only the possibility of evil and not evil in actuality? *Possibly.* However, neither of these suppositions, nor their opposites, can be proved. We must take the world as it is and search out its meaning. No other world is offered us. Moreover, we tend to oversimplify the task of planning a world different from the one we have. Such a world would not be different in one respect only, but in all respects. Is such a world conceivable?

Natural evil presents still another difficulty. The world is in evolution and so far only some of the evils have been overcome and others merely ameliorated. Will the constructive and purposive forces, including man, triumph, or will "progress" some day cease and evil or disorder gain the ascendancy? Will not the available energies of the universe at some distant date, in about five hundred billion years as astronomers tell us, be consumed in keeping with the second law of thermodynamics? "The theory of evolution," says Huxley, "encourages no millennial expectations. If, for millions of years, our globe has taken the upward road, yet, sometime, the summit will be reached and the downward route will be commenced. The most daring imagination will hardly venture upon the suggestion that the power and intelligence of man can ever arrest the procession of the great year."[19] To face this inevitable human annihilation, Bertrand Russell recommends a stoical frame of mind in the following eloquent words:

> Brief and powerless is Man's life; on him and all his race, sure doom falls pitiless and dark. Blind to good and evil, reckless of destruction, omnipotent matter rolls on its relentless way; for Man, condemned to-day to lose his dearest, to-morrow himself to pass through the gate of darkness, it remains only to cherish, ere yet the blow falls, the lofty thoughts that ennoble his little day; disdaining the coward terrors of the slave of Fate, to worship at the shrine that his own hands have built; undismayed by the empire of chance, to preserve a mind free from the wanton tyranny that rules his outward life; proudly defiant of the irresistible forces that tolerate, for a moment, his knowledge and his condemnation, to sustain alone, a weary but unyielding Atlas, the

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[19] "Evolution and Ethics, Collected Essays," Vol. ix, p. 85. (D. Appleton and Co.)

world that his own ideals have fashioned despite the trampling march of unconscious power.[20]

To those who worship at the shrine of physical science and who argue on the basis of physical laws that the universe will some time run down, carrying all life and value with it, we may reply: (1) Let the hypothesis be granted. Does it necessarily follow that when the energies measurable by physical science are in a state of perfect equilibrium, the realm of mind and spirit shall cease to function? (2) The laws of the physical sciences, including the second law of thermodynamics, have been worked out within the limits of closed systems of physical energy. Will these mathematical calculations of strains, stresses, and tensions among mass particles hold in the universe at large? The point of view of any particular science is *partial,* hence abstract; the point of view of philosophy is *total,* hence concrete. As Professor Perry says: "To pretend to speak for the universe in terms of the narrow and abstract predictions of astronomy, is to betray a bias of mind that is little less provincial and unimaginative than the most naïve anthropomorphism."[21] (3) Furthermore, Huxley, Slosson, Russell, and those who argue from the second law of thermodynamics, speak the language of materialistic naturalism. The merits of this theory of reality were discussed in Chapter XIII. Here let it be said that we have found reason to adopt the hypothesis of a Creative Source of Energy (God). If the material universe has existed without beginning, it is strange that it has not run down already. Its constructive and ordering forces appear to have been increasing, at least through geological time, and our planet still has a prospect, according to some astronomers, of several hundred billion years. Of course, "if the life of man and all that it implies are but the episodes in what Spencer called the integration of matter and the dissipation of motion, then indeed,'' as James Ward states, ''there is nothing more to be said.''[22] But if, on the other hand, as we are trying to show, life and mind give a deeper clue to the nature of reality than matter; if the spiritual, as the flower and fruit of the cosmic process, is indicative of what is supreme in the universe, then there is nothing to justify the gloomy forebodings of natural science.

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[20] Bertrand Russell, "A Free Man's Worship," in "Mysticism and Logic," pp. 56–57. (Longmans, Green and Co., 1923.)

[21] R. B. Perry, "Present Philosophical Tendencies," p. 347. (Longmans, Green and Co., 1912.)

Again, it may be said that man never can achieve the complete adjustment and harmony which his ever-changing physical and social surroundings demand of him. For example, if he succeeds in cutting down the mortality rate by increasing material comforts and creating a science of medicine, thus lessening the demand for increased population, he must face the physical and social problem of a sex urge adapted to the hazards of primitive conditions of life. If through the civilizing process he develops a delicacy of physical constitution, he, like the higher breeds of domestic animals, takes on a susceptibility to disease which makes him an easy victim to the more savage, though more rugged, peoples. If he increases knowledge and power, these only beget a craving for more of their own kind in even more diversified form. Complete adjustment and harmony, therefore, are only a will-o'-the-wisp to delude the energetic and aspiring. Now, one answer to such reasoning is to strive for severance of life from all physical and social ties.[23] Let it be granted that some detachment from the flux of things is necessary for serenity of life. There is truth in this suggestion; but the greater truth lies in another direction, namely: First, the changes in man's physical constitution, in his material civilization, in his knowledge and power, must be accompanied with a commensurate refinement of spiritual sensibility and with a heightened ethical administration of his increased cultural capital. This much is imperative if he is to cope with his unchanged inner capacities and his changed outer physical and social environment. Second, it is not a finished task or a final goal that man's dynamic nature craves; rather it is a flying goal. Something of the insight of Lessing must be caught, if change and becoming are to be understood: "Did the Almighty, holding in his right hand Truth, and in his left Search after Truth, deign to tender me the one I might prefer,—in all humility, but without hesitation, I should request Search for Truth."

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[22] ''Realm of Ends,'' p. 360.

[23] *Cf.* Aristotle, Diogenes, Spinoza, and the ascetics.

C. Moral Evil Incident to a World of Human Freedom and Development

Moral evil, like the moral good, cannot be understood apart from man's biological and psychological make-up. It is these qualities of his nature that constitute his sociality. Moral evil thus arises from the social nature and contacts of human beings; or, to use Kant's phrase, it is due to man's unsocial sociableness. If the individual lived alone, he could experience bodily pains and pleasures, perhaps also the barest mental satisfactions, but he could not experience duty, obligation, desire for approbation, fear of punishment, reproof, guilt or remorse, to say nothing of self-control, self-restraint, temperance, sincerity, loyalty, and coöperation. In a word there could be no moral consciousness. These virtues are generated in a growing psychophysical organism in lively interaction with other similarly constituted human beings.

Let us inquire more deeply into human nature. As a living organism man is born into the world a bundle of wants, desires, cravings, impulses, and tendencies—so much raw material for growth and development. In him are capacities and talents, yet in potentiality, not actuality; they are but the prophecy of what he may become. These latent tendencies also constitute for the individual his ability to respond selectively to his physical and social environment and to appropriate from this environment through learning such elements as he would build into his character. These native impulses and capacities at the beginning are neither good nor bad ethically: they are the possibility of moral goodness and badness, because they are the mainsprings of all human activity. Since moral evil arises in man's relations to his fellow men, this type of evil has its roots in man's psychophysical nature.

Moral good and moral evil are thus seen to have a common source in man's rich endowment of undeveloped capacities. Good as well as evil appears in the process of the unfolding growth of these energies under the exciting stimulus of the social environment. Take for example, the impulse for food and self-preservation. These tendencies are at the basis of agriculture, industry, business, government, and education. Their perversion brings, in consequence, graft, bribery, lying, theft, insincerity, disloyalty, and even murder. Without the sex impulse there would be no family life, and probably no music, poetry, or painting. And, on the other hand, there would be no divorces, no domestic infelicity, no orphaned children, no venereal diseases. The normal, healthful, and considerate exercise of man's instincts and capacities in harmonious human relations results in peace, happiness, and abounding joy in living. The perversion and selfish exercise of these powers means isolation, disorganization, pain, suffering and distress.

It is impossible to conceive of a world in which man should be a creature of growth and development, a being of moral, religious, and esthetic personality without the *possibility and necessity of freedom.* It is possible that man might have remained on the low plane of the animal, without capacity for the spiritual life. It is conceivable that he *might* have been created an automaton. Thomas H. Huxley says: ". . . if some great power would agree to make me always think what is true and do what is right, on condition of being turned into a sort of a clock . . . I should instantly close with the author."[24] But certainly to be an animal governed by instinct and impulse offers no attraction to one who has experienced the joy of exploring life's possibilities through reflective choice. And to go through life an automaton, however perfect, is to ask for a life without problems, without a task, a purpose, or a cause. This, as William James said, would mean that the wine of life were drawn from the start. In the words of Jean Paul Richter, "it is not the goal, but the course which makes us happy." To have a world conditioned as "a vale of soul-making," as a realm for the growing and maturing of moral personality and not have moral evil possible, is simply inconceivable.

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[24] "Methods and Results, Collected Essays," Vol. I, p. 192. (D. Appleton and Co.)

A similar argument may be made against one who asks for a world without ugliness, error, and falsehood. Such a world would be one in which beauty and truth would be meaningless. These terms are relative and any one of these experiences would be meaningless without its correlative as either possible or actual. As Lessing has put it, "Not the truth which a man possesses or thinks he possesses, but the steadfast task to which he has applied himself of striving after truth, is the true worth of man. If God had concealed in his right hand all truth, and in his left only the ever eager impulse after the truth, and said to me: 'Choose!' I should reverently take his left hand and say: 'Father, give unto me! The absolute truth is for Thee alone.' "[25]

The situation therefore stands thus: It is simply unthinkable that man should grow and develop through experience and at the same time possess in advance the knowledge and skill that is born of trial and error, free choice and responsibility. To ask for a world in which moral evil were impossible would be to ask for a world without freedom. And to ask for a world without freedom would be to ask for a world not moral at all.

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[25] Quoted from J. H. Randall, Jr., "The Making of the Modern Mind" (1926), p. 477. (By permission of, and by arrangement with the Houghton Mifflin Co.)

This social theory of the origin and significance of moral evil encounters at least two difficulties:

1. It may be argued, if there is no evil principle in the world, why do men seek evil or have inclination to it? Men do mistake wrong for right, just as they sometimes confuse the false and the true, the ugly and the beautiful. But this is no proof that there is a basic evil principle in the universe. It seems more reasonable to us to hold that *evil as evil* is the choice or aim of no man. Evil when it is truly understood is seen to be self-destructive. Can a human being intelligently will his own destruction? It is said the Devil aims at evil and that continuously. But we are not obliged to believe that his Satanic Majesty is anything other than the personification of a tendency to disorder in the world. When Milton's Satan says: "Evil, be thou my good," he is choosing what for him at the moment is not evil. Man thus may mistake his real good, but it is not in him to purpose with a rational will what he recognizes as evil. This is the truth in Socrates' statement: "Knowledge is virtue, vice is ignorance; no man willingly does that which he knows to be wrong."

2. But it will be asked, if evil is social in character, how are we to explain the evil an individual may do to himself? Our reply is that an individual neither can nor does commit a wrong against himself except as a member of society. Individual selfhood and moral personality imply membership in a community of selves, the ideal of which is a perfected spiritual community. A wrong or sin against oneself, thus, if it is a wrong at all, is such as an act of a free person against a member (in this case himself) of the spiritual community. In the words of Professor Leighton, such a "betrayal of one's own spiritual individuality is social treason."[26] There remains the fact of the unequal and seemingly unjust distribution of evil, the darkest mystery of all. In this respect physical evil is as inscrutable as moral evil. The innocent suffer with and

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[26] "Man and the Cosmos," p. 523.

for the guilty, the individual shares the destinies of society, and society the prosperity or ill-fortune of the individual. The innocent and the ignorant often suffer sharper penalties for wrongdoing than enlightened sinners. Nature's processes bind the living to the non-living by making the former dependent upon the latter; the family of living things she binds together into the solidarity of a whole; and the human race she makes one by principles of biology, psychology, and history. Is there anything in the economy of nature to mitigate this seeming inequality and injustice? Although there is no complete answer, two considerations may give some light: (1) It is possible that in a world made up of interdependent parts the unequal distribution of physical evil is a necessary implication of nature's method of securing the best through natural selection. (2) The solidarity of the human race, growing and developing, as it does, its material and spiritual values, seems to make possible (shall we say necessary?) the fact of vicarious suffering. Moreover, the vicarious suffering of the good, according to Plato, the Hebrew Deutero-Isaiah, and the New Testament writers, has redemptive value. How, except by sharing their losses, could the members of society mutually share their gains?

When evil, then, is regarded not as a cosmic principle, but as a kind of incompleteness, disharmony, and disorder in a world of growth which more and more the constructive tendencies and forces are seeking to overcome, we can understand truth in such sayings as: Evil is "stuff to try the soul's strength on" (Browning). "Good is not evil, but it is good that evil is" (St. Augustine). "Evil, O Glaucon, will not vanish from the earth. How should it if it is the name of the imperfection through whose defeat the perfect types acquire their value?" (Plato). Of course, this theory cannot be extended too far. If the difficulties and dangers of living were too strenuous, life itself, the very condition of ethical endeavor, would not be possible.

D. Evil as the Attribute of Lower Levels of Being

The lower planes of development are naturally regarded as inferior, hence evil, when left behind. Once we abandon the notion that the world either now or at any time in the past was finished and accept the view that it is in a process of becoming, a process in which individualities and values are being realized, we are well on the way to an understanding of evil. Such an interpretation of the cosmic process makes it possible to recognize the reality of evil without exalting it into an ontological principle; it makes it possible to see that evil from one point of view is the opposition of disorder which may be overcome, transformed, transmuted, and changed; and that from another point of view it is only the lower levels of achievement in their time good, but now left behind. Thus as higher and higher planes of growth are reached, the lower levels appear more and more evil. This principle of explanation applies, we believe, not only to physical and moral evil, but also to error and ugliness. The physical evils of which we now complain did not exist in the prehuman age, and the physical evils which existed five thousand years ago did not exist two hundred thousand years ago. Time and the finer organization of physical process cause the older and cruder forms to appear inferior. Such moral and social evils as international war, illicit opium traffic, liquor smuggling, slavery, political graft, conflict of labor and capital, divorce, adulteration of manufactured goods, automobile speeding, and so on, did not exist ten thousand years ago. Human intelligence and will applied to social organization have brought into being mutual admiration and respect, coöperation, friendship, and love. Their negation of opposites are what we mean by evil. In consequence of this ennobling of human personality and this sublimation of man's instinctive and impulsive tendencies into rational and conscientious behavior, the old customs and practices are branded as sinful and inhuman. Suppose the evolutionary process had ceased at some geological age prior to the appearance of man. What would have been the status of physical evil? And of moral evil? "Sin" appears in that stage of human evolution where man begins to exercise voluntary choice and rational freedom. Had man not entered the realm of moral selfhood, there would have been at most only instinctive and habitual action on the animal plane.

E. EVIL INCIDENT TO AN ETHIC WHICH EXALTS PLEASURE

Almost every form of pessimism assumes that man's fullest life, if not his most worthful existence, is achieved through the experience of a surplus of pleasure or "happiness" over pain or unhappiness. Lord Byron gives expression to this view in the petulant lines:

> Count o'er the joys thine hours have seen,
> Count o'er thy days from anguish free,
> And know, whatever thou hast been,
> 'T is something better not to be.

Schopenhauer endorses the same conviction when he says: "If we could even approximately conceive the sum of want and pain and misery of every sort on which in its course the sun daily shines, we should acknowledge that it would have been better if the earth like the moon had been but a lifeless mass."[27] The more popular and unphilosophical forms of pessimism also imply that man exists to gratify his senses. This seems to be at the root of the restless boredom of the debauchee who is tired of life because the senses are cloyed. It explains the complaining discontent of the idle rich, as well as of those great masses of mankind who must work but think they would be happier if they had nothing to do except indulge their appetites. Is pleasure the aim of life? Is pleasure or "happiness" what man wants when he has come to an understanding of his deeper needs? And is unpleasantness the only thing to be avoided? The pessimist's indictment of the world frequently assumes that they are. To an examination, though brief, of this basic premise, we must now turn.

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[27] Quoted by Ward, "Realm of Ends," p. 323, from "Parerga and Paralipomena," Book II, Sec. 150.

This pleasure conception of life, as we observed in the preceding chapter, is called *hedonism*. The theory takes two forms: (1) *psychological* and (2) *ethical*. Psychological hedonism maintains that the only thing men ever desire is pleasant feeling and that the only thing they ever seek to avoid is unpleasant feeling. This is simply faulty psychology; it is not true to the facts. What men desire are the *objects* upon which their impulses and sentiments are directed. Sensuous pleasure is an accompaniment merely of the satisfaction of organic impulses and appetites; sensuous unpleasantness is an accompaniment of the thwarting or obstructing of such impulses or appetites. What the part or whole of the organism craves is activity, self-expression, or definite and specific objects which contribute to further activity, not pleasure or avoidance of pain. Ideational pleasantness and unpleasantness are the concomitants of successful and unsuccessful mental activity respectively. Those who make this false psychological reading of human nature sometimes commit the mistake of deliberately cultivating agreeable feelings and in consequence are led into the vices of sensuality and perverted estheticism. No; man is more than a creature of sensibility, whether of pleasantness or unpleasantness. Man's rational nature and his active life of purpose also make demands upon him and determine his interests and desires. Pleasantness and unpleasantness are but the by-products, the accompaniments of normal and abnormal activity respectively. It should not be forgotten that pain is a signal of danger, bringing to the organism a survival value. Moreover, pleasure especially tends to elude those who seek it directly, and unpleasantness often comes to those who, selfishly seeking to save their lives, unexpectedly find that they have lost them.

Ethical hedonism maintains that pleasure is the *good* and unpleasantness is *evil*, and that men *ought* to seek and promote pleasure and to avoid pain and diminish it. Accordingly ethical hedonism goes one step further than psychological hedonism. It agrees with psychological hedonism that human nature is so constituted as always to seek pleasant feelings and to avoid unpleasant feelings. But it goes on to affirm that men *ought* to seek pleasure and to avoid pain. Pleasure, therefore, becomes the ethical ideal. Now the truth of ethical hedonism lies in the fact that the choice of the good is invariably pleasant, and the consequences of good choices to the individual and society in the long run contribute to happiness and well-being. But it does not follow that pleasure or happiness is the good which men *ought* to seek. Ethical hedonism is inadequate for the following reasons: (1) It implies the truth of psychological hedonism; this we have regarded as false. (2) Human sensibilities do not provide in themselves the principle of their own organization; reason must supply this. (3) It implies the measurability of pleasure and pain. (4) It subordinates duty and virtue to pleasure and expediency. (5) It implies a one-sided view of personality; namely, that sensibility takes precedence over intellect and will. (6) The deliberate search for pleasure and avoidance of pain leads to excesses of sensuality and estheticism or the love of mental excitement.[28]

F. EVIL CAN BE OVERCOME

The pessimist's case is further weakened by the fact that, while evil cannot be entirely removed because of its functional rôle in a growing world and its partial status as relative to the good, yet it can be conquered or mitigated. The history of civilization is but the story of how through intelligence and will man has slowly subdued the raw forces of the physical world. Through invention, discovery, manufacture, and other devices of science, nature's powers have been harnessed and turned back upon herself. Having discovered nature's ways and begun, at least, to formulate her laws, man may if he chooses avoid most of the physical evils which weighed so heavily upon primitive man. He can protect himself against the extremes of heat and cold, against flood, earthquake, and fire by precautionary measures. Through mental and physical hygiene, medical and surgical skill, the distress of disease can be prevented or alleviated.

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[28] See William K. Wright, ''General Introduction to Ethics,'' Ch. XIII. (The Macmillan Co., 1929.)

Moral evil too steadily yields before the constructive humanitarian efforts of the race. This is evident from the fact that the vices of one age are not altogether the evils of another. The prevalence of theft, burglary, graft, bribery, the unique character of the liquor and narcotic problem, selfish and ruthless nationalism, divorce, the wasteful conflict of capital and labor—these are a few of the conspicuous evils of our age. In this connection it should not be forgotten that the daily press dangles before our eyes the seamy side of life. It is the exception that constitutes news and appears in the headlines on the front page. The multitude of staple virtues, slowly and carefully built up through many generations—such virtues as temperance, courage, honesty, self-control, coöperation, loyalty, and fidelity, with the millions of people for whom they are as dear as life itself—these are seldom favored with large type. The growing facility for education and the dissemination of knowledge means much toward the alleviation of human ills and the removal of ignorance. The agencies by which moral evil and error are overcome contribute also to the removal of ugliness from man's surroundings.

G. Evil and Self-Realization

In spite of evil the world is a good place in which to build character and develop personality. Before the presence of evil can be cited as evidence that the world is not purposive and good, it must be shown that pain has no function in soul-making, that it cannot be transformed into the higher experiences; it must be shown that evil cannot be overcome and that the world is unsuited to the realization of man's fullest life. This plainly cannot be done. On the contrary the foregoing considerations show that man is constituted in his physical, mental, and spiritual make-up so as to be challenged into the exercise of all his powers by just the kind of world with which he is surrounded. Nature made man for growth and development. She would teach man that his joys are not to be found, but created through struggle and conquest. Through self-discipline and sacrificial toil he must earn the right to enter his heaven of achievement and happiness. Stated otherwise, attainment implies the labor of attaining; victory, the grueling toil of battle; serenity of soul, a life courageously and thoughtfully lived. Indeed that would be an empty and meaningless happiness which could be had without a price. What the pessimist regards as evils are in most instances either the stimuli to normal activity or the perversions of what would have been virtues had growth or activity taken place normally. Thus man's vices are in most instances the excess or perversion of his virtues. Furthermore, the normal human being loves conflict and opposition. In the words of James, "It is indeed a remarkable fact that sufferings and hardships do not, as a rule, abate the love of life; they seem, on the contrary, usually to give it a keener zest."

No; such evils as exist do not prevent the onward progress of personal and social well-being. They are the *sine qua non,* so far as the finite mind can see, of the attainment of that upper limit of rational and spiritual selfhood. "No cross, no crown," is literally true in the world of the spirit. The misery of the finite world seems to be a necessary element in the process of discovering and possessing the better things. The universe is severe, but we believe it is the severity of necessity and love. Thus there are compensations. For the pain suffered, the hardships endured, the battles won, there is the reward of deepened insight and ripened character. At its heart the world is just and right; it is moral at the core. It will not belie the "instinct" of faith and hope which it has implanted within the human breast. Though it cannot be scientifically proved at any moment, past experience seems to justify the belief that all things work together for good to those who painstakingly search out nature's ways and observe them.

In conclusion we should like to quote with approval the fine words of Josiah Royce: "The world is, on the whole, very nearly as tragic as Schopenhauer represents it to be. Only spirituality consists in being heroic enough to accept the tragedy of existence, and to glory in the strength wherewith it is given to the true lords of life to conquer this tragedy, and to make their world after the divine. The way to meet Schopenhauer's pessimism is, not to refute its assertions, but to grapple practically with its truths. And if you do so, you will find as the real heart and significance of Schopenhauer's own gloomy thought, a vital, yes, even a religious assurance, which will make you thank God that . . . the very ice and cold, the very frost and snow, of philosophy praise and magnify him forever."[29]

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[29] "The Spirit of Modern Philosophy" (1892), pp. 230–231. (See also Chs. VIII and XIII. (By permission of, and by arrangement with, Houghton Mifflin Co.)

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Chapter XX

THE EXISTENCE OF GOD AND THE PERSISTENCE OF VALUE

IN A general way the relation of philosophy to religion was treated in Chapters IV and XVIII. Here our interest is in the question: Is there a reality in the world that may be called God? If so, how is God to be thought of, how conceived and defined? Is there a logical place in a reflective and critical world view for the idea of God? If so, how does it fit into the descriptive view of nature which the sciences reveal? The philosophical discussion of these questions calls for a knowledge not only of the spirit and method of science, but of the facts of individual and group religious experience.

It should be remembered at the outset that a belief in the existence and reality of God (or gods) is common to all religions. Religions may exist on different continents, they may be separated widely in time, they may have their various sacred literatures, and have their different modes of religious behavior, such as prayer, worship, and rites, yet they will all have a belief in beings who more or less control man's fortune. This belief, except in rare instances, is not arrived at by argumentation; it is acquired for the most part spontaneously, and unconsciously, through the influence of the physical and social environment. The sacred literatures of the great historical religions do not attempt to prove the existence of gods or God; they assume, they accept without question, the existence of beings or a Being who, in some sense, presides over the destiny of the people. The organization and institutions of society which obtain among these different religions take account of the deities, or deity, and make their changes and adjustments accordingly. Thus it is only where science and philosophy have been at work that questions are asked about the existence of deity and whether there be one or many. Only when man takes a reflective and critical attitude to the world and his beliefs about it; only when at the risk often of social ostracism, or even physical punishment, he examines and questions the assumptions and preconceptions of religion handed down through tradition, is evidence or proof demanded.

To the masses even to-day, within the churches of Christendom as well as in the non-Christian religions, where religious nurture and training have thoroughly indoctrinated the adherents with the traditionally approved beliefs and practices, there would be little interest in our present inquiry. Such an investigation might even be regarded as useless, if not sacrilegious. But to those, whether professedly religious or not, who have lived and worked in a scientific atmosphere, the experienced world presents a dual aspect: in the first place, a connected system of *existences* revealed through the natural sciences; and in the second place, a connected system of values—moral, religious, esthetic, and logical—apparent through the humanistic studies. To such, the question will inevitably arise, *Is there some common ground, some principle of unity and continuity which binds these two realms into one orderly and harmonious whole? Is there some pervading creative principle, some cosmic ground of energy, life, mind, and value?* This problem is the most difficult of all philosophical questions, yet it is inescapable. For the reflectively minded, it must be approached in the spirit of earnest and open-minded inquiry.

Our problem in this chapter is primarily one of the existence and nature of God, and we shall hold to this chiefly. However, a few preliminary considerations may be regarded as relevant to the discussion.

I. The Scientific Study of Religion

While it is true that there are conflicting voices among those who have attempted a scientific study of religion, it appears reasonable to believe that in the sciences of religion we have a most reliable source of knowledge as to what religion is, and what it has to say about the world and the meaning of life. Accordingly, we shall give brief space to a descriptive account of their aims and results.

A. The Different Sciences of Religion

1. **History of religions.**—Religious phenomena, like the political, economic, or moral, constitute one of the threads in the complex web of social history. It is the business of the religious historian to isolate, so far as possible, this thread of events and processes and describe it in a temporal and causal manner. Because his task is undertaken in the spirit of science, his material must be objective and open to public or critical examination. Most histories of religion deal only with civilized people, taking the form of a detailed account of a single religion; for example, Christianity, Mohammedanism, or Buddhism, or a more condensed record of the chief religions of civilized people. Williston Walker's "History of the Christian Church" is an example of the former, and George Foote Moore's two-volume work on "History of Religion" is an example of the latter. The principle sources for the study of the religions of civilized people is general literature and so-called sacred literature, documents, monuments, institutions, and practices. Such sources are almost entirely lacking among primitive people. Hence a study of primitive religions calls for another method—principally that of first-hand observation.

Concerning his "History of Religions," Professor Moore says: "In the presentation of the several religions, the endeavor is made, as far as the sources permit, to show their relation to race and physical environment, and to national life, and civilization, to trace their history, and to discover the causes of progress and decline and the influences that have affected them from without. Prominence is given to religious conceptions as they are implicit in myth and ritual, or are thought out by poets, philosophers, and prophets; and particularly to the higher developments in theology, ethics, and religious philosophy. . . .''[1] He observes that most religions appear upon the scene of history with a considerable background of prehistoric culture in the form of ritual, myth, or superstition, much of which persists like an organic inheritance and carries over into the historic future. It is these vestiges or survivals from the prehistoric that enable the historian to project his view into the historic, and to understand the inertia against which the reformer must contend. While attempting to bring into relief the uniqueness and individuality of each religion, the historian does not fail to take note of the *unity in diversity*. Comparison of beliefs and practices, institutions and observances, is also a minor emphasis.

2. **Psychology of religion.**—The psychology of religion is an application of the principles and methods of general psychology to the religious experiences and behavior of individuals and groups. Accepting the empirical and inductive approach of general psychology, a psychological study of religion proceeds by an impartial observation of the facts, be they the private experiences of individual persons, the public records of social religious practices, or the ideas in common religious belief. These facts are classified and organized, and, at last, are generalized into empirical laws and principles. ''Three methods for obtaining material naturally present themselves,'' says James Bissett Pratt, ''and have in fact been followed by leading psychologists; the first is a study of individual experiences as portrayed in autobiographies, letters, and other spon-

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[1] P. v. (Charles Scribner's Sons.)

taneous expressions of religious persons. The second method is the collection of answers to definite questions from a number of persons through the use of the *questionnaire.* The third method investigates the relatively objective expression of social religion furnished by history, anthropology, and the sacred literature of various peoples."[2] The psychology of religion is thus a descriptive science in which the particular is explained in terms of the general and the general in terms of the particular. Its aim is a descriptive and causal explanation of all observable religious phenomena, whether mental states, ideas, and beliefs, or the outward conduct of individuals, and groups. A systematic and orderly view of the whole class of religious events is thus approximated, making possible both prediction and control within certain limits.

3. **Comparative religion.**—A comparative study of religion, as the title indicates, is a descriptive comparison of two or more religions upon such matters as origin, founders or founding, sacred literature, and views of inspiration; conceptions of deity, man, good, and evil; the origin and meaning of the physical world, the origin and destiny of man; the meaning and means of salvation; and influence upon civilization. Such a study makes it possible to see unity amidst the diversity in the religions of ancient India, of Greece and Rome, of Scandinavia, of China and Japan, of Persia, of the ancient Hebrews, including that of the so-called Christian nations to-day. Not until recent years could such a study be undertaken because critical, historical scholarship and the necessary wealth of factual data were both lacking, even if religious intolerance would have permitted it. Now that religions are no longer classified into the true and the false, the revealed and the natural; and further, since religious tolerance permits comparison, sympathetic and critical scholars can proceed to work out comparisons. Two things will be obvious at once to anyone

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[2] "The Religious Consciousness" (1920), p. 32. (By permission of The Macmillan Co.)

who senses the greatness of this task: (*a*) The rare combination of abilities necessary to a thorough and impartial treatment of all the relevant facts. Among such qualities of mind certainly would be scientific accuracy, a sympathetic appreciation of the beliefs and practices of foreign religions, a judicial discrimination in respect to values, a fearless trust in spiritual worth wherever found, and a synthetic, as well as analytic mental temperament. (*b*) The results of such a study would be both informative and stimulative to the adherents of any religion included in the comparison.

4. **Philosophy of religion.**—The philosophy of religion is the application of philosophical principles and methods to a specific phase of experience, that is, the religious, with the purpose of estimating its general meaning and value. Its source material is drawn from the sciences of religion, where the facts about religion are gathered and organized into partial systems. The philosophy of religion attempts a further and more systematic organization of religious knowledge in order to consider the fundamental meanings of the beliefs and practices of religion.[3] Clearly, then, a philosophical study of religion is the most comprehensive inquiry into religion that can be made. It implies a group of the sciences of religion—history of religions, psychology of religion, and comparative religions—and in addition it involves theory of knowledge, theory of values, and theory of reality. Inquiry must be made into the validity of the religious experiences, and the bearing of these experiences upon the nature of reality. It is broader and more critical than theology, which is a reasoned, systematic statement about the teachings of a particular religion. On the other hand, it is less comprehensive than systematic philosophy, for a philosophy of religion must take its place harmoniously *within* an ultimate world view and life view.[4]

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[3] See William K. Wright, "A Student's Philosophy of Religion," p. 4. (The Macmillan Co., 1922.)

[4] See George Galloway, "The Philosophy of Religion," pp. 1–53 (Charles Scribner's Sons, 1914); Harold Hoeffding, "The Philosophy of Religion," pp. 1–13 (The Macmillan Co., 1906).

In addition to the aforementioned sciences of religion, religion may be studied from the following points of view:

a. The literary creations inspired by religion.

b. The influence of religion upon music, sculpture and architecture.

c. The bearing of religion upon social institutions, customs, and manners,—a sociological approach.

d. The relation of religion to ethics.

B. FACTS ABOUT GOD FROM THE SCIENCES OF RELIGION

1. **Idea of God (or gods) universal.**—Students of the history of religion now generally agree that all peoples, however primitive or advanced in culture, have some form of religion. In his "The Living Religions of the World,"[5] William E. Hume states that there never has been a tribe of men without some form of religion. He further indicates that "What constitutes a person's religion is his belief in some God, or gods, and his experience of that God, or gods."[6] Among such people of primitive culture as, for example, the Todas of India, the Negritoes of Africa, and the natives of Central Australia, the conception of deity or deities may be so vague as to be almost lacking entirely. Nevertheless, each of these peoples has its ceremonies of prayer and ritual which imply a belief in the supernatural. Buddhism and Jainism began without a belief in deity, but they very soon developed a belief in gods.

2. **Idea of God a growing concept.**—Variety is characteristic of the conception of deity among all religions. Not only will different peoples view deity differently, but those views are constantly undergoing modifications under the influence of such cultural conditions as geography, mode of economic, political, and moral life, the influence of intellectual and spiritual leaders. The concept of God is

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[5] Published by Charles Scribner's Sons, 1924.

[6] *Op. cit.*, pp. 1, 3.

affected very much among civilized races by the state of science and learning. The ancient Hebrews, for example, attained an ethical monotheism under the influence of adverse political experiences and the moral insights of her prophets, while the ancient Greeks achieved a monotheistic conception of deity through the intellectual leadership of her scientists and philosophers.[7]

The student of the problem of God will do well to get acquainted with the meaning of certain terms, many of which represent stages in the development of the God-idea from primitive life to the more advanced stages of civilization. *Mana,* for example, is the name which the people of Melanesia apply to the mysterious, impersonal power or force believed to reside in all nature about them and which is able to work unusual feats. It may inhabit such objects as a stone, an arrow, a fruit tree, an animal, or a human being. It is the God-idea for these people. The Pygmies in Africa call this force *Oudah.* Such terms as *Manitou, Wakonda, Orenda* appeared among various tribes of North American Indians to designate the same power. Traces of this *mana* idea persist even in civilized countries where the rabbit's foot or horseshoe are believed to bring good luck. An almost invariable accompaniment of a belief in *mana* is the practice of *magic, sorcery, fetishism, taboo* and *totemism.*

Upon the primitive basis of mana-belief is developed a belief in the existence of many gods, or *polytheism.* This may be regarded as an advancement in the God-idea, since under polytheism the activities in nature are accredited to many beings with specialized functions and unique characteristics. Usually these beings are personal. *Henotheism* is a belief in the existence of many gods, one of which is chief. Every historical instance of polytheism has been more or less henotheistic. It may develop out of polytheism as follows: A number of tribes, each having its own tribal deity, are united by force or by friendly means. Their deities may be organized in the form of a pantheon, the god of the larger or more powerful tribe assuming the place of preëminence. Later, this first among the gods may take over the functions and prerogatives of the lesser gods, and we have *monotheism,* which is a belief in one God. *Monotheism,* as we have before indicated, may develop out of political, ethical, or intellectual motives. *Theism* is a belief in the existence of one God who is personal, spiritual, and with whom man may have communion and fellowship. Theism believes in God's transcendence and immanence; that is, in the wealth of his power and spiritual worth, God is not exhausted in the manifest world (transcendence), yet in the mode of his activity, God is within the world (immanence). We have an analogy, though imperfect, in the relation of a poet to his poem, or the author to his book. Both express themselves in their works, yet both are much more in the richness of their natures than what they have expressed. *Pantheism* teaches that God is one with the world. All is God and God is all. This view identifies God with nature. It teaches that God is wholly immanent, and not transcendent, to the world.

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[7] See William E. Hocking, ''The Meaning of God in Human Experience,'' Ch. XXIII. (Yale University Press, 1912.)

Deism, a view which had its origin in the seventeenth century, but became prominent in the eighteenth century, holds that while God is creator, and lawgiver, he does not intervene to work miracles or to reveal himself in any supernatural way. Deists believed that God reveals himself as much in nature as in the Bible, and that prayer can effect no changes, except in the one who prays. *Atheism* literally means *without God,* or a denial of the existence or reality of God. Historically, there have been few thoroughgoing exponents of this view. Most persons who have been called atheists have been such, not by profession, but have been labeled such by those who held a different view of God. For example, deists and pantheists have been called atheists. *Agnosticism* is a term coined by Thomas

Huxley to imply man's ignorance of the real nature of ultimates, whether matter, mind, or God. With Herbert Spencer, whose attitude to ultimates was agnosticism, Huxley held that human knowledge is finite and limited; it deals only with the relative. The Absolute is unknowable.

3. **Historical religions and the existence of God.**—The existence of God, or gods, in historical religions is accepted as a matter of course, or on faith, no evidence or proof being demanded. Like the common-sense view of matter, some idea of God was simply there (socially) to be accepted. In the words of William E. Hocking, "Proof in set terms has never been the work of religion, for religion knows how to convey proof or demonstration in the form of deeds. Religion practically and personally points men to God."[8] Religion for the masses has always been and remains to-day largely a matter of intuition, emotion, and imagination. As Professor Hoeffding says: "The word 'religion' stands in the main for a psychical state in which feeling and need, fear and hope, enthusiasm and surrender play a greater part than do meditation and inquiry, and in which intuition and imagination have the mastery over investigation and reflection."[9] Only when reflective thought or science has made considerable progress, only when a theology is developed, are evidences sought for the existence of God. Theology, with few exceptions, seeks its evidence, if it asks for it at all, in sacred literature. So-called secular knowledge is regarded as yielding only corroborating evidence.

Founders of religion, as well as their ardent devotees, believe that God (or the gods) reveals himself through especially "called" teachers, prophets, or messiahs, through such means as dreams, visions, by word of mouth, or even by an inner spiritual illumination. Those who receive such communications from the deity are said to be inspired. Thus, generally, the ultimate truths and commands of religion are regarded as a matter of special revelation, and are to be accepted on faith by the followers. The existence of a revelation implies the existence of a revealing God. Thus invariably, the existence of God is an unquestioned fact for the founders of religion. Two of the living religions in the world to-day started atheistically: Buddhism, founded by Gautama Buddha, in India, about 500 B.C.; and Jainism founded by Mahavira (599–537 B.C.), also in India. Both taught a doctrine of salvation by personal ethical cultivation and control. Both developed a conception of deity, the popular forms becoming polytheistic.

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[8] *Op. cit.*, p. 304.

[9] "The Philosophy of Religion," p. 1.

4. **Critical scholarship in religious thought.**—Until the later eighteenth century, little was done in the form of historical and critical scholarship with so-called sacred literature. Two reasons, at least, retarded such a study: First, the inherent difficulty of such a task. Historical inquiry is dependent upon documents. The study of these sources with a view to determining age, authorship, teachings, and design, is far more exacting than the study of physical events. Physical events are repeatable and are amenable to experimentation, while historical events are not. Second, the popular belief that the Scriptures are a type of literature apart and different from ordinary prose and poetry, because divinely inspired, discouraged critical examination. While the conservative view still prevails in wide circles, scholars are now quite free to apply the generally accepted scientific principles and rules of literary interpretation to the Bible and other sacred literature. That such a treatment is warranted is evident from the following considerations: (*a*) Every important religion has a body of literature believed by its adherents to be inspired. Usually, the evidence is both internal and external. In several instances, full or plenary inspiration is claimed. (*b*) These literatures disagree with and often contradict one another. Not only this, but in the same body of sacred literature may be found historical discrepancies, and funda-

mentally different conceptions upon such questions as deity, morals, and the appropriate forms of religious conduct. Obviously, the test of truth and value in a religion cannot be in terms of itself, but must be objective. (*c*) The study of most sacred literatures, for example, those of the Hebrews and ancient India, shows that, like the strata in the earth, different parts came into existence and were laid down at different times. The later writings teach more developed and refined conceptions. Only by the use of objective and scientific methods can unity and coherence be found in any single bible, or in all the sacred literature of the race.[10]

II. Grounds for the Belief in God

After a rather lengthy introduction, we are now ready to face directly our problem of the existence and nature of God. No one to-day, who knows the enormity of the task, attempts to prove or demonstrate in full, the existence of God. It is doubtful whether logically contrived arguments have ever in the past produced religious conviction where it did not exist before. Historically, arguments for the existence of God have confirmed belief, rather than produced it. Moreover, the difficulties in proving the existence of God are not only practical or psychological, they are technical and logical. They are the difficulties alluded to by Thomas Huxley and Herbert Spencer in their defense of agnosticism in respect to all ultimates. Anyone who thinks he has proved the existence of God by logical and inferential processes will find upon closer inspection that he has more in his conclusion than he has in his premises. Reference here, of course, is primarily to the theistic God, who is regarded as a personal, spiritual presence and power, both immanent and transcendent. Though there are no arguments which, either singly or combined, fully establish the existence of God, we believe there are *evidences intellectually respectable* which warrant the thoughtful person in believing that God exists. To these evidences we shall now turn.

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[10] *Cf.* Columbia Associates in Philosophy, "Introduction to Reflective Thinking," Ch. VIII. (Houghton Mifflin Co., 1923.)

The president of one of our state universities, discussing recently the question of immortality, said: ''Nothing has ever been proved that is worth proving.'' This is one of those partial truths that needs to be remembered, especially in view of the changing views of science about ultimates. Certainty is usually attached to those matters which are of least importance. Prof. C. Lovatt Evans, in his presidential address before the physiological section of the British Association for the Advancement of Science, September 10, 1928, said: ''Matter, energy, time and space are in the melting pot and out of it will come we know not what of strange relations of one to another. Of one thing we may be sure—that no final explanation will follow.'' For religion, God will always be a postulate of faith, though reason may be found for such faith. The reasons, too, will change somewhat from age to age. Just as in the venture of securing an education, in choosing a vocation, in choosing a life companion, in setting up a new form of government, proof of success cannot be had at the outset. Life, indeed, is a venture of faith.

A. The Traditional Arguments for God

1. **The ontological argument.**—This argument, advanced by St. Anselm (1033–1109), has appeared in varied form from his time to our own. The nerve of this argument lies in the claim that the *reality* of God is involved in the *idea* of God. The argument expanded follows: The idea of God is the notion of a perfect being. Such an idea is the conception of a being greater than which nothing can be thought. Now, if God does not exist, our thought of him is not the thought or idea of the most perfect being we can conceive. The idea of a being who has existence, in addi-

tion to other traits, is the idea of a more perfect being than the idea of one having no existence. Hence, God must exist. Such modern philosophers as Descartes, Spinoza, Leibnitz, Hegel, Bosanquet, and Royce recognized some force in this argument when stated in other ways. The fallacy of Anselm's statement, however, was exposed by the monk, Gaunilo, who pointed out that by similar reasoning one might prove the existence of a perfect island in the sea. The argument only shows that the idea of an existing God implies more than the idea of one that does not exist. The philosopher Kant subjected the ontological argument to a most penetrating criticism and showed conclusively, as he thought, that from an idea or conception one cannot deduce the predicate of existence. Professor Hocking finds considerable force in the ontological argument. Having pointed out that religion never offers proof in set terms but always in the form of deeds, he says, "It is always with some incredulity that we meet the assertion that any idea of ours carries with it its own guarantee of reality. Yet this same ontological argument is the only one which is faithful to the history, the anthropology of religion. It is the only proof of God."[11] This reasoning implies that just as we believe that our ideas of matter, space, time, and causality have an objective ground, so may we believe in respect to the God-idea. This is realism in religion.[12]

2. **The cosmological argument.**—This type of argument reasons from the nature of the cosmos or world to the existence of a necessary cause or ground. In the "Timæus," Plato teaches that every created thing must be created by some cause. Aristotle argued that motion in the world implies a mover, which he called the Prime Mover. St. Augustine, in the fourth century A.D., recognized truth in the Greek arguments. In modern times the cosmological argument has taken two forms: First, the

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[11] *Op. cit.*, p. 307.

[12] See *ibid.*, Ch. XXII, "The Ontological Argument for the Existence of God"; also W. H. Sheldon, "Another Form of the Ontological Proof," in the *Philosophical Review*, Vol. 32.

presence of a contingency or interdependence of facts and processes in the world, it is held, implies the existence of a non-contingent being as ground. The second form of the argument begins by recognizing that in the experienced world, causes and effects follow each other in regular sequence. This chain of causality, it is believed, cannot be infinite and endless. There must be a first or uncaused cause as the source or ground of all the series of causes. This argument, too, was criticized by Kant as not proving the existence of a being over and above the experienced series of facts.

3. **The teleological argument.**—This argument involves a special application or extension of the cosmological argument. From the earliest Greek philosophers down to this day, men have experienced order and adaptation in nature. The presence of order, law, and harmony implies purpose or design. From purpose and design it is necessary to infer the existence of mind or a supreme intelligence—God. All that can be said in defense of a teleological world view, it is held, points logically to the reality and existence of God. In his "Essay on Atheism," Francis Bacon says, "For while the mind of man looketh upon second causes scattered, it may sometimes rest upon them and go no farther; but when it beholdeth the chain of them confederate together, it must needs fly to Providence and Deity." From the ancient Plato down to the latest idealistic philosopher, this concatenation of physical objects events, and processes in the world, reinforced by the impressive array of purposive activities in the life of man—political, economic, moral, religious, and esthetic—have led many thoughtful minds to infer the existence of God. Even Kant, the preëminent critic of the historical arguments, regarded it with respect. As we shall notice later, this is doubtless the strongest of the older arguments.

It may be well to observe that, as Kant pointed out, the teleological argument leans back on the cosmological, which in turn leans back on the ontological. In the words of

George Galloway, "They presuppose the principle that what we find ourselves obliged to think holds of reality; and this is the nerve of the ontological proof. In short, all the arguments involve the validity and trustworthiness of thought."[13] Since all reasoning and argumentation implies the trustworthiness of human thought, it cannot be discredited merely on the ground that its subject matter is a religious problem.

4. **The historical argument.**—This argument, though often referred to in the past as a proof, is hardly to be regarded as such. It is the argument *e consensu gentium* and runs thus: The masses of mankind of every clime and race, irrespective of cultural achievement, date, and place in history, have believed in God or gods. It is unbelievable that this common consciousness of mankind through the ages could be in perpetual error. The weakness in this argument lies in the fact that while there has been a consensus of belief that some power above or beyond man exists, there has been wide diversity of view and belief in regard to the *qualities* of that power. On what this power or being is, views have varied all the way from the grossest materialism to the most refined spiritualism.

Some writers identify the historical argument with what seems to be a definite direction in cultural evolution. An overruling Providence is discerned in the fact that "Through the ages one increasing purpose runs." The Hebrew prophets saw God's hand in the rise and fall of nations. Hegel's "Philosophy of History" is the most stupendous attempt to show that a divine Providence presides over the destinies of nations and peoples.[14] This conception of history, we believe, might well be treated as an element in the teleological argument.

5. **The moral argument.**—The general argument from the nature of values will be treated later. Here we purpose

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[13] "The Philosophy of Religion," p. 391.

[14] See Hegel, "Philosophy of History" (translated by J. Sibree), esp. pp. 9–13.

only to state Immanuel Kant's moral argument for the existence of God. Having pointed out the fallacies in the older proofs, Kant proceeds to expound a proof based upon man's moral experience. The normal human being, Kant observes, has a sense of moral obligation. It weighs upon his consciousness with all the gravity of a *categorical imperative.* It says, in fact, "Thou must." This sense of duty is a natural and normal implication of man's rational nature. Rational man is moral by nature; that is, he feels an inner compulsion to maintain a *good will.* Now if man is to take seriously this sense of duty, this *feeling of ought,* he is forced to accept all its implications. What are they? Reason tells us that a good man ought to be happy; he is deserving of it. But the virtuous life is not always rewarded with happiness in this world. Sometimes the wicked flourish and the righteous perish. Reason tells us that there ought to be a Being who apportions happiness according to deserts. Such a Being must be all-wise, perfectly just and righteous, as well as all-knowing. He must preside over the destinies of both the physical and spiritual realms. Thus, the implications of the moral experience, *if* accepted as valid, require the existence of God. The same premises lead Kant to accept the freedom and immortality of the soul.

6. General estimate of traditional arguments.—To those for whom proof means necessary logical connection and implication, these arguments fall short of their goal. By many philosophers it will be granted that they suggest probability of varying degree. However, God, in the rich, spiritual meaning implied by ethical religions such as Christianity, Mohammedanism, Buddhism, and Taoism, has not been reached fully either by inductive or deductive reasoning. It has taken men a long time to learn the truth of William James's trenchant words: "The attempt to demonstrate by purely intellectual processes the truth of the deliverances of direct religious experience is absolutely hopeless."[15] Yet, while these so-called proofs fail logically, they are not without force and value. They bear witness to the persistent determination of man to find a rational support for his faith. Like the intellectual gropings of men in other realms—for example, education, politics, and morals—they have sustained an aggressive, optimistic, and composed attitude to life in a world of change and uncertainty. All of these arguments exhibit a deep conviction on the part of man that the experienced world is incomplete and imperfect and that it needs a deeper reality to complete it. This deeper reality, though beyond the ken of the senses, men have sought to reach by reason. *Practically,* one or more of these arguments have been adequate to those who lived in the past; *theoretically,* they were unsatisfactory, and remain so to-day. In this respect they may not be unlike workable theories in other realms.[16]

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[15] "Varieties of Religious Experience," p. 435. (Longmans, Green and Co., 1917.)

B. CURRENT EVIDENCES OF GOD

1. **God in human experience.**—In all ages men of different religious faiths bear testimony to an intimate personal experience of God. This impressive fact is brought to light by every historical study of religion. There is evidence of such an experience in the autobiographies of religious leaders and in the written accounts of the life and work of prophets and saints. The Hebrew and Christian religions present such eminent names as Moses, Isaiah, Jeremiah, Amos, St. Paul, St. Augustine, St.

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[16] Cicero makes the following interesting observation upon arguments about God: ''I always have defended and always shall defend the beliefs we have received from our ancestors concerning the immortal gods, nor will the words of anyone, learned or unlearned, ever move me from these beliefs. . . . And yet for this very thing which I have faith in on the authority of our ancestors, you show me no reason at all why it is so. . . . To me one reason is enough, that our ancestors handed this belief down to us. But you despise tradition (or authority) and strive through reason. Then it is open for my reason to strive with your reason. You advance all these aguments for believing in the existence of God (gods), and the thing I do not at all doubt in my own mind, you make doubtful by argumentation.'' From ''*De Natura Deorum*'' III, ii–iv, translated by V. D. Hill.

Teresa, St. John of the Cross, John Tauler, Böhme, Meister Eckhart, St. Ignatius Loyola, Martin Luther, and George Fox. Among the non-Christian religions we have Zoroaster, Lao-tze, Mohammed and Plotinus. These teachers, prophets and saints have mightily affected history. The institutions which they established or promoted have deeply influenced government, economic life, law, education, and the fine arts. Many of them are world figures. The psychology of religion records instances of spontaneous and gradual spiritual awakenings, of conversion, of prayer and fellowship, of intimate personal communion, in which the reality of God appears genuine to those who have had the experience.

The great prophets and teachers of religion have needed no proof of God's existence. They have felt and known God personally, and to them this experience has metaphysical import. In consequence, their supreme question is not, does God exist, but, *what* is God and what does he require? In the more primitive religions, the Being who is supposed to be the source of the experience may be regarded as sometimes jealous, envious, and even malevolent. In the higher and ethical religions, this reality is generally regarded as friendly and benevolent, having such qualities as power, love, righteousness, justice, and, withal, personality. For the more intellectually-minded, this Being may be regarded as absolute, eternal, omnipresent, omnipotent, omniscient, the creative source of life and energy in the world. To an Emerson, this reality is both a pervading spiritual presence, a supreme mind, and an Oversoul, "The wise silence, the universal beauty . . . within which every man's particular being is contained and made one with all other." . . . To Wordsworth, this reality is

A presence that disturbs me with the joy
Of elevated thoughts; a sense sublime
Of something far more deeply interfused,
Whose dwelling is the light of setting suns,
And the round ocean and the living air,

> And the blue sky, and in the mind of man:
> A motion and a spirit, that impels
> All thinking things, all objects of all thought,
> And rolls through all things.

For the mystics proof of God's existence is unnecessary because superfluous. Of this evidence Professor Hocking says: "We have not been expressly undertaking a proof of the existence of God, but in finding God as a necessary object of experience, have we not, in a way sufficient and decisive, proved his existence? What other final proof can we have that any being exists than to find, or *demonstrate,* that Being in experience?"[17]

2. **Intuitive knowledge of God.**—The previous evidence stressed the fact that historically men of all races professed to have an experience of God. Here we point out that just as our scientific, moral, and esthetic interpretations of the world imply *intuitions,* so God may be an object of *immediate experience.* Immediacy or intuition is the starting point of all knowledge; that is, it is involved in sensation, perception, feeling, imagination, and it extends even into reasoning, where concepts are employed. We take the view here that man has an immediate knowledge of other persons or selves just as he has of physical objects, and we hold that the Divine may be so experienced as *value.* If God be regarded as immanent in the world, if he be the indwelling principle of unity, order, and value, then we see no reason for invalidating the testimony of any, whether they be poets, prophets or mystics, who say they have experienced God directly. We should insist, however, that reason and reflection be applied in the testing and organization of these religious intuitions, just as we apply them in the sciences. Intuition by itself is only a part or phase of the cognitive experience. It needs to be supplemented by reflection and interpretation.

3. **The evidence from morals.**—In our chapter on "The Problem of Cosmical Mechanism and Theology," we

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[17] "The Meaning of God in Human Experience," pp. 302–303.

pointed out that a teleological world view not only leaves the way open logically for a belief in God, but that it actually suggests the probability of such an existence as God. The presence of the moral experience and moral values in the human realm was regarded as requiring a purposive view of the world. It remains here only to elucidate further the point made.

From the dawn of human history to the present time, there is nothing more universal, more persistent, and more compelling in human experience than man's sense of moral obligation. As a spur and motivation for human endeavor, both individual and collective, it has played a major rôle in human history. So seriously have individual groups, nations, and races taken their sense of moral responsibility, that they have lived strenuously and died gladly to keep the moral conscience clear. The *moral order* in which the normal person finds his membership is a part of the total world. This is a *fact* as potent and objective as any other. It seems reasonable to suppose that it gives a clue to the nature of the ultimate ground of things. One reasonably asks, what is the character of the universe, what is the quality of the creative source of a world which gives birth to man with inescapable moral sensibilities? If this reasoning be sound, then we may suppose that whatever other qualities or attributes the ultimate World Ground may have, it must be moral. So far as human knowledge goes, the moral experience is always associated with beings of intelligence and mind. The facts of the moral life, therefore, point to the existence of a Supreme Mind or Personality at the heart of things.[18]

4. **The evidence from values in general.**—By value is meant the property of a thing in virtue of which it confers immediate satisfaction or is the means of securing it. So far as we know, only selves experience value. Selfhood or personality is a thing of intrinsic worth; it needs nothing

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[18] *Cf.* W. R. Sorley, "Moral Values and the Idea of God." (The Macmillan Co., 1918.)

else to make it valuable. It is the point of reference for all other values. The root of the value consciousness is *feeling* and *interest.* Man, thus, is an evaluating creature because he *needs, feels, thinks,* and *aspires.* Values may be moral, religious, esthetic, or logical, not to mention others. We have already indicated how moral value suggests the probability of a moral World Ground. The religious life in such experiences as worship, prayer, meditation, intimate personal communion and fellowship with what is believed to be a Supreme Spiritual Reality, yields such values as peace, self-development, and self-completion. The ethical experience is almost inseparable from the experience of the higher religious values. Esthetic values found in the sense of beauty engendered by objects in nature and works of art, such as literature, music, sculpture, painting, and architecture, are experienced in close association with the moral and religious values. Then, logical or truth values, the values of knowledge, insight, and understanding, are interfused with all others, because judgment is involved in all value experience. We are suggesting, then, that while values are separable and distinct, yet they overlap and interfuse. Can a thing be good without being true and beautiful? Can truth, goodness, and beauty be separated completely? Plato insists that they are one.

If the realm of values is to be taken seriously—that is, if values are to be regarded as a true part of the cosmos and suggestive of the nature of ultimate reality—then it seems reasonable to suppose that all values converge in a Being who is intelligent and in some sense personal. Idealistic, and in the main, realistic philosophers, from Plato to our own time, have so concluded. In the words of Professor Leighton: ''Logical, ethical, moral, and religious valuations can have no absolute basis unless personality have an absolute basis. The ultimate foundation of spiritual values must reside in a supreme self or nowhere.''[19] That is to say, unless we are to regard the whole class of value experiences as illusory and in the end deceptive, we must conclude that they have a ground and principle of unity in a Cosmic Being. To say that they are illusory and unreal would seem to impeach human intelligence in other realms as well as in religion. Because the value experience is so imperious, God may be viewed as the ground, creative source, and principle of unity and harmony among values. The zoölogist argues that the eye and the ear in the organism are the result of the organism's response to something in the environment—light and sound. In a similar way it may be argued that man's value experience is a response to something in the world —God.

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[19] ''Man and the Cosmos,'' p. 412. (D. Appleton and Co., 1922.)

It is argued by some that the God-idea is needed as a logical basis for disapproving of evil, error, ugliness, and unrighteousness, the negative aspect of the values under discussion. This view seems intelligible if God be conceived as the principle of rationality and order in the world, or, as Plato would say, the unity of truth, goodness, and beauty.

5. **Evidence from the organic character of the world.**— More and more it is dawning upon scientists and scholars in diverse fields that the experienced world is one interconnected and interdependent whole. The sciences are recognizing their interdependence. Psychologists are impressed with the dependence of mental processes upon body processes. Religious teachers and artists are seeing that mind, with its value experiences, is inseparable from the body. The modern theory of organic and cosmic evolution, as treated in Chapters X and XI, inclines to view the manifoldness of physical nature, including man and civilization, as essentially one continuous and unified process. Accordingly, we find philosophers and scientists positing God as the principle of unity and continuity, the creative urge or dynamic power, the principle of rationality, law and order, the nisus to the whole, and so on. Plato has his *Idea of the Good;* Aristotle, his *Prime*

Mover; the Stoics, their *Providence;* the neo-Platonists and other mystics, their *Ineffable One;* the Hebrews, their *Jahweh, the righteous lawgiver;* the Christians, their *God, the Heavenly Father* revealed through *Christ, the Redeemer;* Spinoza, his *One Substance, God,* with the two known attributes, mind and matter; Kant, his *Moral Law* and *God, its author and sanction;* Hegel, his *Absolute Idea;* Eucken, his *Spiritual Life;* Bradley and Bosanquet, their *Absolute Experience;* Royce, his *Absolute Self;* Bergson, his *Life, Spirit, Mind;* Morgan, his *Activity* or *God.*

6. The pragmatic argument.—The word *pragmatic,* as has been noticed already, comes from the Greek word πρᾶγμα and means *deed* or *action.* William James treated the problem of the existence of God pragmatically, because he believed it could not be solved on purely intellectual bases. No one can prove by argument either that God exists or that he does not exist. Hence, the issue must be resolved in terms of the *consequences* of belief and unbelief upon human beings. In the end it is a question of which *works* best—belief or unbelief. There are, in fact, three aspects of the argument: (*a*) Emotionally, belief in God is more satisfying than disbelief. J. H. Edwards in his "God and Music" argued for the existence of God through consideration of rhythm and harmony. This esthetic argument is close to William James's emotional pragmatism. (*b*) God exists because his existence is or can be willed. Truth is something which man makes. The truth of God's existence is something which man may—in fact, does—will. This is volitional pragmatism. (*c*) That is true which works practically in human society. The pragmatic theist could look into history and point out the social benefits which have followed from belief in God. In addition to these three phases of the pragmatic motive for belief, James held that "the world of physics is probably not absolute" and that "our whole physical life may be soaking in a spiritual atmosphere,"[20] suggesting that there probably is a *More—A Divine Life*—which is the origin and fulfillment of man's sense of value.

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[20] "The Will to Believe," p. 57. (Longmans, Green and Co., 1912.)

William James's position may be summed up thus: We must either believe or not believe. There is no established truth in the sciences or common sense that makes belief irrational or intellectually unrespectable. If belief *works* emotionally, volitionally, and practically, better than disbelief, then we had better believe. Or, to put it another way: Let us suppose the argument for and against the existence of God is 50–50, not 51–49 or 49–51, but just 50–50. Then it is necessary to decide, for to refuse to make a choice is itself a decision. Since we have to choose, it is better to choose in favor of our hopes and wishes than to decide against them. In the words of another scientist, Pascal, who believed that "the heart has its reasons which reason does not know":

> Let us weigh the profit and loss involved in betting on the existence of God. Let us consider these two alternatives: If you win, you win all; if you lose, you lose nothing. Bet then on his existence without hesitation.[21]

C. Evidences Cited against Belief in God

We cannot here develop at length the arguments sometimes used against a belief in God. It will be sufficient to mention some of them and indicate their general character. Some of the arguments cited below are directly philosophical and some are not.

1. **The God-idea is a relic of primitive thought.**—Those who reject the belief in God explain the almost universal belief in God as a hangover from primitive times. Some writers of reputed scholarship in certain specialized fields resort to this argument. They hold that the present-day

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[21] From M. Léon Brunschvicg's edition of *Pensées et Opuscules,* § 233, quoted from C. C. J. Webb, "Pascal's Philosophy of Religion," p. 52 (Clarendon Press, 1929). See also William James, "Pragmatism," pp. 97–115; and *The Personalist,* July, 1928, three articles: "The God of Philosophy," "The God of Religious Experience," and "Science and the Concept of God."

belief in God implies that the race has not outgrown the childhood stage of human culture. Mankind still clings to a form of animism; it worships a creature of the feelings, emotions, and the imagination; it is still superstitious. From this standpoint God is nothing more than a cosmic Santa Claus, or a glorified Uncle Sam. The God-idea is nothing more than a personification of all the great and good forces which man has come to experience within and from without himself. Man has read into the world a cosmic mind or soul and given it superlative qualities.

2. **Religions have existed without the God-idea.**—Because religions have existed without the belief in God, it is argued that they may still so exist. It is true that Buddhism and Jainism, two religions founded in India in the sixth century B.C., began without a belief in God. The Religion of Humanity, founded by Auguste Comte (1789–1857), has had a small following without accepting the existence of God as a metaphysical reality. The adherents to the Religion of Humanity would make humanity the object of all human striving, the soul and center of all values. For the unseen, intangible, and hypothetical entity, God, they would substitute Mankind as a visible and tangible object of devotion and service. Certain forms of the several varieties of humanism now current accept the basic principle of Comte's conception of religion. It may be stated here that within one hundred and fifty years after their death, both Buddha and Mahavira (founder of Jainism) were worshiped as divine.

3. **A materialistic metaphysics opposes belief in God.**—Those who hold that reality is fully explained in terms of matter, physical energy, or any other physico-chemical entity, find no place in the universe for God. The philosophical positivist who holds that physical science is the last stage of knowledge may be equally strong in his disbelief in God. Since God cannot be seen, heard, or handled, since God cannot be discovered with a scientific instrument or found at the end of an equation, it is argued that the

reflective mind need not assume his existence. No single train of reasoning or combination of arguments, it is held, can prove God's existence. The materialist and positivist usually cite the presence of evil and disharmony in the world as evidence against the existence of God.

4. **A naturalistic world view can dispense with the God-idea.**—The term *naturalism* has been used in many senses during the last century and a quarter. We use it here to describe the world view of such men as Haeckel, Büchner, Feuerbach, Ostwald, Smuts, and Sellars. The philosophical views of these men are attempts, each in his own way, to interpret and define ultimate reality in terms of the physics, chemistry, and biology of his own day. The materialism of the seventeenth and eighteenth centuries is abandoned as entirely too crass; yet life, mind, and value are practically reduced to subtle and refined forms or aspects of matter. In a word, life, mind, and value are explained as the result of an evolutionary process operating by means of a "stepping up" or novel synthesis of matter on lower levels. Obviously such a naturalism, which is little more than a refined materialism, cannot employ the God concept.

However, not all forms of evolutionary naturalism, either in the present or past, abandon the use of the God-idea. Herbert Spencer, in the nineteenth century, and S. Alexander, L. T. Hobhouse, and C. Lloyd Morgan of the present century, are notable exceptions.

5. **Intellectually we do not know that God exists.**—This is the position of agnosticism. Thomas Huxley and Herbert Spencer, both nineteenth century scientists and philosophers, are typical exponents of this view. Many so-called materialists were really agnostics at heart. As pointed out earlier in this chapter, agnosticism teaches that ultimate reality cannot be known. The mind of man is finite, and knowledge is relative. If this be true, even materialism and naturalism cannot stand, for they presume to tell us about reality. But most agnostics, though warmly

disclaiming to do so, have said much about ultimate reality. It is difficult to be a consistent agnostic. For example, Spencer says: "But one truth must grow ever clearer—the truth that there is an Inscrutable Existence everywhere manifested, to which he (the scientist) can neither find nor conceive either begininng or end. Amid the mysteries which become the more mysterious, the more they are thought about, there will remain the one absolute certainty, that he is ever in the presence of an Infinite and Eternal Energy, from which all things proceed."[22] If it is true, as Huxley asserts, that "our one certainty is the existence of the mental world" and "the notion of necessity has a logical and not a physical foundation," then the way seems open to a belief in God.

Many agnostics, for example, Huxley and Bertrand Russell, hold that all of our means of representing objects or realities in the world are but *symbols;* our ideas and concepts are but *signs* which our reflective imaginations fabricate to stand for objects. The term *God* in religion is but one of these symbols or signs. It is further argued by some that all conceptions of deity in the past and present are nothing more than anthropomorphisms; that is, the reading of human qualities, interests, and hopes into the ultimate forces of the universe. Man's impotence and fear caused him to create the gods, it is said, in his own likeness. Thus God is referred to in the masculine gender, is said to be great in power, wisdom, and goodness. The reply usually given to these two views cannot be fully set forth here. Yet it may be said that if religious experience and the science of religion are to be invalidated because concepts are symbolic and because there is anthropomorphism in the God-idea, then by the same reasoning all knowledge, even the sciences, must receive the same indictment.[23]

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[22] "Principles of Sociology," Vol. III, p. 175. (D. Appleton and Co.)

[23] See James Ward, "Naturalism and Agnosticism," pp. 175 ff., 549 ff. (The Macmillan Co., 1899.)

III. Current Philosophical Views of God

Religious and philosophical literature contains many attempts to say what God is. Invariably scholars acknowledge that the attempt to define God is presumptuous. Mystics especially are strong in this claim. Naturally, if God is what he is generally supposed to be, man's comprehension of God would seem to imply that the created and dependent had lifted itself to the plane of the creator. The finite would approximate or become the Infinite.

All ultimates are difficult, if not impossible, of definition. This is true, as we have seen, of life, mind, and value. Yet clear and distinct knowledge implies and requires definition. As science advances and as our understanding of the particular events and processes of nature increases, an improved conception of ultimates may be formulated. With a deeper insight into the nature of matter, life, mind, and value, it may be possible to come to a truer knowledge of God. We shall indicate below, a few typical conceptions of God as they appear in the current literature of the different schools of philosophy. At the end we shall state concisely the conception of God which is implied in the world view and life view of this entire study.

A. IDEALISM

Historically idealism as a type of philosophy has been friendly to religion. In fact it has been so hospitable to religion that some opposing schools have charged idealism with developing its world view and life view upon religious and moral data primarily. Few idealists would admit the truth of this accusation, though they would grant that individual and group religious experience is as important for philosophy as any other type of experience. Let us see how the different forms of idealism regard God.

1. **Absolute idealism.**—Absolute idealists to-day, following the lines marked out by Kant, Fichte, and especially

Hegel, tend to identify the whole of reality with an Absolute Experience, as in the case of F. H. Bradley; with complete individuality, as in the case of Bernard Bosanquet and J. E. Creighton; or, with an Absolute Self or Will, as in the case of Josiah Royce. Bradley, Bosanquet, and Creighton hold that the God of theism is less than the Absolute, and hence is contained within the Absolute. It is argued that if God comes into relationship with the world and with evil, then he cannot be the Absolute, for the Absolute contains all particular relations in a perfect unity. Again, if God is personal, he cannot be the Absolute, for personality implies the imperfect, the related, and dependent. God is an aspect and an appearance of the Absolute.

Josiah Royce, America's ablest exponent of absolute idealism, holds a little closer to the view of Hegel on this point and identifies God with the Absolute Spirit, Self, or Will. Hegel sometimes conceives God as the Absolute Mind or Spirit, existing timelessly and in static perfection, like Spinoza's eternal and unchangeable Substance. At other times he conceives God as the process of cosmic evolution, the ceaseless time-occupying, changeful process by means of which matter, life, and mind reach their highest development in such human culture forms as science, religion, art, and philosophy. These two standpoints were never fully reconciled by Hegel; perhaps he wished them to stand as viewpoints of the same reality. Royce develops this second standpoint in Hegel's philosophy. To him time and change are real; finite selfhood with its experience of feeling, thought, and freedom are real. All things finite are real, but they are contained as indissoluble elements in the Absolute Self, the "Logos," the "World Interpreter," the one "Spiritual Community," God. These are different names for the same ultimate reality. Thus, for Royce, God is in the midst of time, change, and evolution, in that he understands, appreciates, lives in, and shares with man the common world. On the other hand, God is above time and change; that is, he is eternal in the sense that he comprehends all time and change as a *totum simul*—''all at once.'' Royce's conception of God as a ''Spiritual Community'' has been acceptable to some eminent theologians.[24]

In regarding deity as ''Spiritual Community,'' Royce seems to imply that God is the spiritual ground and unity of all human relations, such as coöperation, friendship, and love. Just as our own selfhood or mind is the ground and bearer of our separate thoughts, aims, and purposes, so God is the all-embracing, all-unifying Mind or Self which unites our several minds and spirits. God, therefore, is a society of selves. From this point of view, God may be regarded as suffering with man, sharing his joys and sorrows and as being enriched by human attainment. In his own words, ''Only the Infinite Self, the problem solver, the complete thinker, the one who knows what we mean even when we are most confused and ignorant, the one who includes us, who has the world present in himself in unity, before whom all past and future truth, all distant and dark truth is clear in one eternal moment, . . . the Logos, the world possessor, . . . only his existence, I say, is perfectly sure.''[25]

2. **Creative evolutionism.**—Henri Bergson's philosophy may be accepted as representative of the viewpoint of creative evolution. Bergson identifies God with a cosmic principle of Life or Mind, and he describes Life as possessing the character of ''duration,'' creativity, and freedom. ''God,'' he says, ''has nothing of the already made; He is unceasing life, action, freedom.''[26] Again, he says, ''I see in the whole evolution of life on our planet a crossing of matter by a creative consciousness, an effort to set free, by force of ingenuity and inventiveness, something which in the animal still remains imprisoned, and is only

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[24] *Cf.* Sir Henry Jones, ''The Faith That Inquires'' (The Macmillan Co., 1922); and A. Seth Pringle-Pattison, ''The Idea of God in Modern Philosophy'' (Oxford University Press, 1920).

[25] ''The Spirit of Modern Philosophy'' (1892), p. 374. (By permission of, and by arrangement with, Houghton Mifflin Co.)

[26] ''Creative Evolution'' (translated by Arthur Mitchell), p. 248. (Henry Holt and Co., 1911.)

finally released when we reach man.''[27] Repeatedly Bergson criticizes the formal, finished, and static conception of God. In its place he would think of God as ''vital activity,'' ''unceasing life,'' ''consciousness,'' ''the generator at once of matter and of life.'' It is probable that William Patten means to refer to God when he speaks of the ''creative power in the universal whole'' which gives to the world its unity, continuity, and general direction or drift. ''Back of all evolutionary processes,'' he says, ''lies a universal compulsion to constructive action.''[28]

3. **Personal idealism.**—The conception of God as found in personal idealism is well represented in the views of Borden P. Bowne (1847–1910) and his disciple, Edgar S. Brightman. Of all philosophers, the personal idealist is the most emphatic in teaching the personal character of God. The personal idealist, therefore, opposes deism, pantheism, and mysticism, and teaches that God is to be conceived as the Supreme Person who embodies the highest goodness and who is the creative source of the existent world and all value. Bowne speaks of God as the infinite, creative world ground, the personal unifier and coördinator of the parts of the universe. All limitation of God is regarded as a self-limitation. He is therefore perfect and complete in knowledge, power, love, and goodness. He is also eternal, self-consistent, and omnipresent.

Personal idealism is careful to avoid the error, as it thinks, of absolute idealism, which conceives the relation of the Absolute to the finite self like that of the whole to the part. The world for personal idealism, following Berkeley, is a community of persons or minds created and sustained, but not identified with, the Supreme Mind, God. God is thus both immanent and transcendent. Purpose is the fundamental quality or category in God's nature. God knows, feels, and wills, and enters sympathetically into relationship with man.

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[27] ''Mind Energy,'' p. 18. (Henry Holt and Co., 1920.)

[28] ''The Grand Strategy of Evolution,'' p. 129. (Richard G. Badger, 1920.)

B. Realism

Realism as a philosophy has been both favorable and unfavorable to a belief in God. This statement applies to monistic and pluralistic realism alike. Logical atomism, as exemplified in the philosophy of Bertrand Russell, is either agnostic or atheistic. Critical realism may be either friendly to a belief in God, as in the case of James Bissett Pratt, or opposed, as in the case of Roy Wood Sellars. Let us examine briefly the conception of God as it appears in three types of realism.

1. **New realism.**—This form of realism rejects the pragmatic view of God, which takes God as a "satisfactory working scheme," or the humanistic personification of the group spirit; it rejects the view of phenomenalism, which takes God as an object of faith, but not of knowledge; it also rejects the view of objective idealism, which regards God as the Supreme Mind, creating and unifying the world. For new realism, God is especially concerned with the world of values. In the words of Professor Spaulding, "God is the totality of values, both existent and subsistent, and of those agencies and efficiencies with which these values are identical."[29] God *is* truth, beauty, and goodness, and in so far as these values are both in the world and above it, God is both immanent and transcendent. In a word, "God is Value, the active, living principle of the conservation of values and of their efficiency."[30]

2. **Emergent evolution.**—The view of emergent evolution on the conception of God is well exemplified in the writings of S. Alexander and C. Lloyd Morgan. The cosmology of these two philosophers was set forth in a former chapter. Both accept a theory of cosmic evolution under the form of levels. The chief point of difference between them, as it affects the problem of God, is that, whereas Alexander begins with space-time and regards the universe as evolv-

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[29] "The New Rationalism," p. 517. (Henry Holt and Co., 1918.)

[30] *Ibid.*, p. 517.

ing through matter, life, and mind to deity, Morgan begins with matter *and* God as a creative Activity.

Alexander views God from two points of view. First, God is an emergent quality which appears as a culmination of the cosmic process; deity is the highest empirical quality known to the finite mind. Second, to him, God is the whole world, always becoming and always tending towards deity. Alexander distinguishes between God and deity. Deity is a "quality" which is always becoming but never is; God is actual "being" and is a forecast of "ideal God" or deity. Spirit, personality, and mind are characters which belong to God, but not to his deity. The second view of God presented by Alexander is that of a *variable quality* which is always the next higher quality to any particular level of existence. From this point of view God is the whole universe moving toward deity. As the world grows and changes in time, deity advances also.[31]

Morgan's conception of God is not that of Alexander's deity, which is a quality always emerging at the growing point of the universe; it is rather a creative and "directive Activity" or "Nisus" running through the whole course of the world. It is the dynamic, ordering principle which makes evolutionary emergence from one level of being to another possible. In his own words, "I acknowledge God as the Nisus through whose Activity emergents emerge, and the whole course of emergent evolution is directed."[32] Thus, for Morgan as for Spinoza, whose views he respects, God is the eternal source, immanent ground, and efficient cause of all that is.

3. **The philosophy of organism.**—A realistic philosophy of organism is well represented in the views of Professor A. N. Whitehead. God for Whitehead is not treated as an exceptional metaphysical principle, introduced from without to save his philosophical structure from collapse. It

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[31] See "Space, Time and Deity," Vol. II, pp. 345–348. (The Macmillan Co., 1920.)

[32] "Emergent Evolution," p. 36. See also pp. 33, 34, 63, 116, 291. (Henry Holt and Co., 1924.)

is, as he says, the chief exemplification of the basic principles of his philosophy.[33] Taking the position that *events* are the ultimate facts beyond which we cannot go, and that objects are aspects of interacting events, he holds that possibility or potentiality constitutes the nature of the universe as much as actuality. The real is both the actual and the possible.

In this view of the world, God is the ordering principle, "the binding element," "the principle of concretion," which, as Whitehead says, "is not *before* all creation, but *with* all creation."[34] From one point of view, God is the unlimited and unconditioned wealth of potentiality which is ever becoming more manifest in the world of actual events as time goes on. From another point of view, God is the primordial potentiality realized or in process of completion. In Whitehead's "Religion in the Making," God is identified with "the kingdom of heaven," with the power which overcomes evil, and with the ideal tendency in nature and man. God is both the immanent and transcendent ground of value. L. T. Hobhouse, in "Development and Purpose," advances a similar conception of God. However, Hobhouse's philosophy as a whole is more pluralistic.

It is not to be inferred, of course, that all who adopt a realistic philosophy of organism admit or make use of the God-concept. For example, Hon. J. C. Smuts, in his work entitled "Holism," discusses matter, life, mind, and personality from the standpoint of evolution, but he contends that, even though nature contains mind and is purposive, the facts do not permit us to infer the existence of a Supreme Mind or Personality. A similar conclusion is drawn by Professor R. W. Sellars in his book "Evolutionary Naturalism," though the detail of his evolutionism is different from Smuts'.

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[33] See "Process and Reality," p. 521. (The Macmillan Co., 1929.)

[34] *Ibid.*, p. 521.

C. PRAGMATISM

The conception of God to be found in pragmatism reflects the psychological and social point of view employed by this school of thought. Reality as well as truth, for the pragmatist, is made, not found. Pragmatism contends that our conception of the world as a whole and in part is essentially humanistic. Things are what they are experienced to be for human knowers. Only through sense experience, action, feeling, and thought can we get at the world. Our conception of God, like our conception of objects and events in the world, will be the product of individual and group experience. Let us go on to examine two examples of a pragmatic approach to the God-idea.

1. **William James.**—In his "Varieties of Religious Experience," "The Will to Believe," and "A Pluralistic Universe," James has given us his most significant thoughts about God. Without attempting to prove or disprove the existence of God, James suggests that we go straight to human experience and find out what the God-idea is and how it functions. The study of individual religious experience, especially that of religious leaders, mystics, saints, and even that of the plain man, reveals that God is a living spiritual presence, "a superhuman consciousness," the source of all of our ideal tendencies, the power in which and by which we live. He says that the world of physics is probably not absolute "and that our whole physical life may lie soaking in a spiritual atmosphere, a dimension of being that we at present have no organ for approaching."[35] Our own spiritual idealism, our striving for the true, good, and beautiful, he holds, leads us "strongly toward the belief in some form of superhuman life with which we may, unknown to ourselves, be co-conscious."[36] This superhuman consciousness in which our lives are bathed, James teaches, is not all-embracing;

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[35] "The Will to Believe," p. 57.

[36] "A Pluralistic Universe," p. 309. (Longmans, Green and Co., 1909.)

but it is finite in power, or in knowledge, or in both[37]

2. **Humanism.**—There are many views in religion which pass under the name of humanism. Auguste Comte as founder of the Religion of Humanity prepared the way for the more recent forms of humanism. The Ethical Culture Movement, founded by Felix Adler, inclines strongly toward humanism in its conception of God. For a typical humanistic conception of God we shall go to the writings of Professor Edward Scribner Ames.

Professor Ames approaches the problem of the existence and nature of God from the standpoint of the history of religion and social psychology. His view of God, in consequence, is a functional conception. The reality of God, he says, "is as demonstrable as the world itself, indeed it is given in the living experience of all socially minded people."[38] Speaking of the nature of God, he writes, "My idea of God is the idea of the personified, idealized whole of reality. . . . I have come to think that my idea of God is analogous to my idea of my Alma Mater. . . . My idea of Uncle Sam is of the same character. . . . Uncle Sam is the personified reality known also as the United States of America."[39] Professor Ames also identifies God with the Spirit of a people; with the Spirit of the world—its order, beauty, and expansion; with love, intelligence, and personality.[40] God, thus, is the idealization of the best that man feels and knows. He is the personification and symbol of the collective value experience of social groups. The major emphasis probably is upon this latter consideration. Such a God obviously grows and is finite. Nevertheless, he is personal, craves worship, is morally responsible, deliberates, makes plans, executes them, and holds the destiny of millions of people under his control.

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[37] See "A Pluralistic Universe," p. 131. *Cf.* also F. C. S. Schiller, "Riddles of the Sphinx," Ch. X.

[38] "Religion," p. 133. (Henry Holt and Co., 1929.)

[39] "My Conception of God," pp. 237, 238, 245, in "My Idea of God," edited by J. F. Newton, (Little, Brown & Co., 1927.)

[40] "Religion," p. 132, 154, 164.

D. A SUGGESTED CONCEPTION OF GOD

We are now ready to indicate the conception of God which, to the authors of this work, seems to be required by religious experience and philosophical reflection. Just how this view is related to the idealistic, realistic, and pragmatic views stated above, the reader himself may decide.

Briefly and concisely stated, we believe that *God is the dynamic energy, the life and soul of the world; the principle of order, unity, and continuity in nature; a creative, end-realizing, and perfecting power; a personal and superpersonal spiritual presence; the source and sustaining ground of our moral, religious, and esthetic values.* This conception regards God as the creative source and sustaining ground of all existence—the material world, the sphere of living things and the realm of mind. God is thought of as a pervading energy, the principle of integration and unity in nature; personal, yet transcending finite personality; infinite and absolute, yet limited by his creation and the rational and ethical requirements of his own nature; immanent in every part of the world, yet transcendent to the world.

Additional clarity may be given to our conception of God if we add a word upon the much discussed question of the finite *versus* the infinite or absolute God. Such eminent thinkers as David Hume, J. S. Mill, William James, F. C. S. Schiller, Hastings Rashdall, and J. M. E. McTaggart have defended the conception of a finite God (H. G. Wells has popularized it) on the grounds of the reality of the moral struggle, and the existence of physical and moral evil, imperfection, disharmony, and maladaptation in the world. In short, the dysteleological features in nature suggest to any rational mind, they hold, that the organizing and constructive force or forces of the world are meeting with opposition, limitation, and partial defeat. God, therefore, cannot be absolute; he can only be the *primus inter pares*—the first among equals. Certain absolute idealists have argued that the God of ordinary theistic belief comes into relation both with the world and with the worshiper. Since, as they hold, anything which comes into relations is limited by those relations, God as a related being cannot be absolute. Thus God must be finite.

Space cannot here be taken for a full discussion of this problem. A few considerations, however, may be offered. The limitation or finitude of God may be recognized, but it is a self-limitation of a twofold character: on the one side a limitation imposed from within by his own nature and character, and not from without; and, on the other side, the self-restriction placed upon God by the created world of finite existences, the laws of whose activities God's moral nature obliges him to respect. In other words, once a world is brought into being, God cannot play fast and loose with it and remain true to himself. The theory of a finite God, we believe, is inadequate for two reasons at least: First, in its effort to take account of man's struggles in the moral and religious life, it goes too far and fails to provide an adequate basis for morals and religion. The finite God turns out to be, as Professor J. A. Leighton indicates, a God *"with limited assets and unlimited liabilities"*—no God at all. Second, the imperfection and incompleteness of the world—that is, its character of growth—if it requires a God, calls for more than a *primus inter pares.*[41]

It is clear from the statements in this and the preceding chapter that in defending the theory of an absolute or infinite God, we are not identifying God with the Absolute of Hegel, Bradley, and Bosanquet, nor with the One of mysticism. Absolute idealists have shown that this cannot be done. God does come into relations. Our position is not pantheism; God is not the Whole or Totality of things. Our position, then, might well be called theism to distinguish it from both pantheism and absolutism. On this view the experienced world in all its varied manifestation of energy, life, order, mind, and value is a continuous expression of God's creative and sustaining activity. This creative self-manifestation of God in finite existence appears on levels or planes of value culminating in spirit and free, self-determining personality. In this sense God is the immanent World Ground, the Unity amidst multiplicity, the ultimate basis of Causation, the Logos or World Reason. God's relationship to the world as creative ground involves certain self-restrictions which we choose to call a self-limitation. But, in the richness and quality of his nature, in the wealth of his power, wisdom, and goodness, in the beauty and perfection of his character, God transcends the created world. In a sense somewhat as the poet is greater than his poem and the architect than his building, so may God be conceived as not exhausted or fully expressed in any part or the whole of his created work. Such a God seems logically to be necessary to a complete doctrine of cosmic evolution, and such a God is required by the ultimate presuppositions in a theory of the reality and validity of truth, goodness, and beauty.

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[41] See Pringle-Pattison, "The Idea of God in the Light of Recent Philosophy." (Oxford University Press, 1920.)

Is such a God personal? Yes, the perfect personality who must also be regarded as super-personal. If, as we have held, spirit and personality are the *end* or *goal* of the cosmic process, and, if it may be believed that God's nature is expressed in his creative work, then we may conclude that no single symbol is quite so applicable to deity as personality. The scientist builds the external world out of symbols devised chiefly by the mathematician. When we come to describe the unseen world of the spirit we naturally turn for our symbols to the realm where worth and value are greatest.[42] This is the realm of consciousness and personality. Personality, with all the elements involved, is the highest category known to the finite mind. Why may this not be applied to the Highest we know or can think?

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[42] *Cf.* A. S. Eddington, "The Swarthmore Lecture," 26th yearly meeting of the Society of Friends, London, 1929. (The Macmillan Co., 1929.)

Now personality implies sociality; it means the fellowship and interrelationship of minds. It follows, then, that since God is conceived as the immanent ground and creative source of finite selves, he may also be thought of as the "perfect community" of selves.[43] Furthermore, when it is said that God is super-personal (the Over-Self), what we mean is that in the perfection and fulness of his rationality, his will, feeling, and activity, God is not restricted by the limitations of finite intelligence and power. The Supreme Self, therefore, may be regarded not only as personality with infinite capacity for wisdom, power, goodness, and beauty; he may also be thought of as entering feelingly into the struggles, the triumphs, and defeats of finite selves.

If God shares in the changing events of nature; if he stimulates and sustains community among men; if he participates in the developments of human history and culture; then, he surely is present also in the growth of the spiritual qualities of the world. God, in short, is the pervasive principle and power of law, life and love. In his relations, both with man and with reality as a whole, he may truly be called the Father God.

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OUTLINE

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